BY THE COMPTROLLER GENERAL

# Report To The Chairman Committee On Government Operations House Of Representatives

OF THE UNITED STATES



# Solving Social Security's Computer Problems: Comprehensive Corrective Action Plan And Better Management Needed

Social Security's daily operations and service to the public are being threatened by serious problems in its computer operations. The agency itself says it is facing a crisis in managing its computer systems.

These problems are the result of longstanding systems planning and management weaknesses at Social Security, which GAO has discussed in numerous reports issued since 1974. These reports have disclosed deficiencies in agency and systems planning, software and systems development, equipment acquisition and operation, and privacy protection and security of records and systems.

Social Security is developing a comprehensive plan to resolve its computer problems. This report summarizes prior GAO findings and presents recommendations to the Secretary of Health and Human Services to help the agency develop an effective plan and implement it successfully.



HRD-82-19
DECEMBER 10, 1981

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COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON D.C. 20548

B-201668

The Honorable Jack Brooks
Chairman, Committee on
Government Operations
House of Representatives

Dear Mr. Chairman:

This is the seventh and final report in a series resulting from your request that we review major automatic data processing activities at the Social Security Administration. It elaborates on key issues we presented in our September 23, 1981, testimony before your Subcommittee on Legislation and National Security.

The report summarizes the major findings, conclusions, and recommendations developed not only during this review but also during prior audit work at the agency. It includes detailed discussion of two topics in which you have expressed particular interest: (1) the extent to which Social Security has used competitive procurement procedures when acquiring automatic data processing and telecommunications resources (see ch. 3) and (2) our assessment of the agency's plan to upgrade its telecommunications system (see ch. 4).

As you requested, we have not obtained official agency comments on this report. As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from its issue date. At that time, we will send copies to interested parties and make copies available to others upon request.

Sincerely yours,

Charles A. Bowsher

Comptroller General
of the United States

COMPTROLLER GENERAL'S REPORT TO THE CHAIRMAN, HOUSE COMMITTEE ON GOVERNMENT OPERATIONS

# SOLVING SOCIAL SECURITY'S COMPUTER PROBLEMS: COMPREHENSIVE CORRECTIVE ACTION PLAN AND BETTER MANAGEMENT NEEDED

## D I G E S T

The Social Security Administration's (SSA's) automatic data processing (ADP) operations continue to be plagued by serious problems. SSA and the Department of Health and Human Services (HHS) agreed in May 1981 that inefficient computer software, inadequate hardware capacity, and systems personnel deficiencies have created an ADP systems crisis at the agency. GAO's work has confirmed major problems in these areas and has also noted continuing privacy protection and security deficiencies within SSA's ADP systems operations. (See pp. 31 to 35.) These problems have combined to create an ADP environment in which SSA systems managers react to day-to-day crises rather than use planned approaches for solving ADP problems. (See pp. 35 and 36.)

This report is in response to a request from the Chairman, House Committee on Government Operations, for a comprehensive review of SSA's ADP systems planning and development, including a detailed analysis of the agency's plans to upgrade its telecommunications network.

## A LONGSTANDING PROBLEM

SSA's current ADP problems evolved over a long time because of numerous, varied, and recurring planning and management weaknesses. Since 1974 GAO has issued 32 reports discussing inadequate ADP-related planning, improper development and modification of systems and software, deficiencies in equipment acquisition and operation, and the failure to provide adequate privacy protection and security for personal records and systems components. (See pp. 4 to 15.) SSA, however, has not acted effectively to correct many systems problems GAO and other organizations identified. (See p. 15.) As a result, serious systems problems persist at SSA. (See p. 4 and pp. 31 to 35.)

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SSA has not always maximized its use of competitive procurement procedures when acquiring ADP and telecommunications resources. (See pp. 17 to 20.) GAO believes SSA can increase competition in its acquisitions while still providing for needed system compatibility. (See pp. 20 to 22.)

SSA's telecommunications network upgrade plan called for acquiring nonprogrammable terminals and upgrading concentrators (minicomputers which help link terminals with main computers). In October 1979 GAO recommended that SSA revise its upgrade plan to provide for acquiring programmable terminals in order to ensure future system flexibility. GAO believed that certain manual workloads in SSA field offices could be automated using programmable terminals, resulting in substantial reductions in field office operating costs as well as improved telecommunications system performance. (See pp. 25 and 26.) Although initially reluctant to modify its terminal upgrade approach, SSA eventually did so. (See pp. 26 to 28.) The agency has since identified potential savings of more than $133 million as a result of this change. (See pp. 28 and 29.) However, based on its review of SSA's planned concentrator upgrade, GAO believes that using the resulting increase in concentrator capacity to process future applications software--which SSA is considering--may be detrimental to the agency. (See pp. 29 and 30.)

To solve its ADP systems problems SSA must implement a comprehensive corrective action plan and substantially improve management of ADP activities. SSA has begun developing an action plan, but it was not completed at the time of GAO's review. Provisions of the Paperwork Reduction Act of 1980 should enhance the likelihood of SSA receiving the executive branch support and assistance it needs to solve these problems. (See pp. 36 to 38.)

## CONCLUSIONS, RECOMMENDATIONS, AND MATTER FOR CONSIDERATION BY THE CONGRESS

GAO believes that support and assistance from executive branch agencies and the Congress

will be required for SSA to develop an effective corrective action plan and implement it successfully. (See p. 39.)

In view of SSA's past difficulties in solving its ADP problems, GAO believes that the Congress should periodically review the agency's efforts to develop and implement its ADP corrective action plan.

To help SSA develop and finalize its plan, GAO recommends that the Secretary direct the agency to:

--Supplement existing systems staff with outside ADP support wherever applicable, but especially for the rewriting of existing application software and the development of new application programs. In all such cases, however, SSA should correctly determine the status of software development at the point of contracting and then develop and manage the contracts very carefully.

--Reexamine current large-scale systems, identify those having poor equipment configurations causing excessive overhead, and reconfigure this equipment wherever possible.

--Carefully screen prospective suppliers of computer time to make sure they can provide adequate privacy protection and security for SSA data.

--Complete the structuring of SSA's comprehensive long-range planning process.

--Begin to plan for completely redesigning SSA's major ADP systems, including competitive replacement of hardware, to correspond with the overall agencywide plan.

--Determine whether the potential disadvantages associated with processing future application programs in the concentrators outweigh advantages of this approach, before deciding where in the telecommunications network such applications may be processed.

GAO also recommends that the Secretary review all prior GAO recommendations for improving SSA's systems and implement those still applicable. HHS should similarly review the numerous other systems studies performed at SSA and implement their recommendations as appropriate, especially those directed to solving recurring problems.

## AGENCY COMMENTS

As requested by the Chairman, House Committee on Government Operations, GAO did not obtain official agency comments on this report.

# Contents

## ABBREVIATIONS

| | |
|---|---|
| ADP | automatic data processing |
| AFDC | Aid to Families with Dependent Children |
| ARS | Advanced Record System |
| DPA | Delegation of Procurement Authority |
| FAMIS | Family Assistance Management Information System |
| GAO | General Accounting Office |
| GSA | General Services Administration |
| HEW | Department of Health, Education, and Welfare |
| HHS | Department of Health and Human Services |
| IBM | International Business Machines |
| NRS | National Recipient System |
| OMB | Office of Management and Budget |
| RSDI | Retirement, Survivors, and Disability Insurance |
| SSA | Social Security Administration |
| SSADARS | Social Security Administration Data Acquisition and Response System |
| SSI | Supplemental Security Income |
| SSN | social security number |

# CHAPTER 1

## INTRODUCTION

The Social Security Administration's (SSA's) primary responsibility in administering its benefit programs is to provide prompt and meaningful service--including timely and accurate benefit payments--to the public. In fiscal year 1982 SSA is expected to pay more than $170 billion in program benefits to more than 50 million beneficiaries. These benefit programs generate a huge automated recordkeeping workload, much of which is processed on 16 large-scale automatic data processing (ADP) systems and a number of medium- to small-scale special-purpose computers located at agency headquarters.

SSA uses these systems to carry out most of its basic responsibilities and program functions--such as maintaining hundreds of millions of Social Security records, including social security numbers (SSNs), master payment records, and lifetime earnings records. The agency also maintains a nationwide telecommunications network to permit rapid data exchange between field offices, program service centers, and headquarters, thereby speeding claims processing and benefit records updating. SSA employs about 2,000 personnel in its Office of Systems to maintain and operate these systems and spends substantial additional sums--more than $123 million budgeted for fiscal year 1982--for ADP and telecommunications equipment acquisitions, supplies, and contractual services.

The quality of SSA's service to the public depends largely on how well its ADP systems operate. Because of the vital role these systems play in day-to-day agency operations, we have, on an ongoing basis, reviewed and monitored SSA's ADP and telecommunications activities, identifying significant weaknesses and pointing out improvements in ADP planning and management needed for better program administration and public service.

From January 24, 1974, to September 1, 1981, we issued 32 reports--15 to the Congress or its committees and members and 17 to Department of Health and Human Services (HHS) 1/ or SSA officials--which discuss various aspects of ADP-related or recordkeeping activities at SSA. (See app. I.) In addition, our April 1979 testimony before the Subcommittee on Social Security, Senate Committee on Finance, dealt in part with SSA's ADP problems. In March 1980 we discussed these problems with the National Commission on Social Security.

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1/Effective May 4, 1980, a new Department of Education was established, and the remaining components of the Department of Health, Education, and Welfare (HEW) became HHS.

We have identified four general categories of longstanding ADP planning and management weaknesses at SSA: (1) inadequate ADP-related planning, (2) improper development and modification of systems and software which result in erroneous processing, (3) deficiencies in acquiring and operating ADP equipment, and (4) failure to provide adequate privacy protection and security for personal records and systems components. Chapters 2, 3, and 4 specifically discuss these weaknesses, which we believe are largely responsible for the very serious ADP problems SSA is experiencing (described in chapter 5). Also in chapter 5, we discuss the approach SSA is developing to solve these problems and how the Paperwork Reduction Act of 1980 should help the agency implement that approach. We also make recommendations aimed at helping SSA overcome its current ADP problems and prevent their recurrence.

## OBJECTIVES, SCOPE, AND METHODOLOGY

In an October 13, 1978, letter, the Chairman, House Committee on Government Operations, expressed concerns about SSA's concurrent pursuit of two major initiatives: a long-range Advanced Systems project aimed at achieving a total redesign of SSA systems and a shorter range project to upgrade the agency's telecommunications capability. His concerns were based on SSA's past inability to implement sound long-range planning efforts, the privacy protection/security and cost implications of these projects, and the potential adverse impact on the American public if the projects should fail. The Chairman further indicated that such projects must be directed at making SSA's systems responsive to meeting its future needs, but without duplicating each other. He therefore requested that we perform an extensive investigation of SSA's total system development plans, including a detailed review of SSA's telecommunications upgrade project.

We conducted preliminary review work to determine what other major SSA systems projects--besides the Advanced Systems project and the telecommunications upgrade--should be included in our review on the basis of the Chairman's concerns. We identified three other such projects underway at that time--(1) an HHS proposal calling for SSA to develop an automated national welfare recipient system; (2) a major SSA effort to totally redesign its Retirement, Survivors, and Disability Insurance (RSDI) computerized system; and (3) the planning and execution activities associated with moving SSA's entire ADP operation into its new computer center building. We agreed with the Committee staff to analyze all pertinent ADP procurement actions, whether proposed, ongoing, or completed, associated with these five projects.

We have issued six prior reports addressing the results of our work on four of the five major projects we reviewed. One addressed certain aspects of the Advanced Systems project--which SSA canceled during its 1979 structural reorganization--and the impact of that reorganization on comprehensive long-range planning at SSA (see app. I, item 21). We recently issued another report based on our followup of SSA's actions to implement our recommendations concerning the agency's long-range planning process (see app. I, item 31). Three other reports discussed, respectively, questionable issues associated with the national welfare recipient system proposal (see app. I, item 17), the problems SSA encountered while attempting to redesign the computerized RSDI system (see app. I, item 28), and key issues surrounding the agency's project to move its ADP operations into its new computer building (see app. I, item 33). The remaining report was based on our analyses of individual ADP procurement actions and made suggestions for improving ADP and telecommunications resource acquisition procedures at SSA (see app. I, item 24).

None of our six prior reports discussed our review of SSA's telecommunications upgrade project; that audit work is described in chapter 4 of this report. In addition, chapter 3 discusses our observations on SSA's use of competitive procurement procedures in acquiring ADP and telecommunications resources. Both of these chapters contain a separate section describing the specific objectives, scope, and methodology of our work related to the particular review topic discussed. Similarly, each of the prior reports cited above describes the objectives, scope, and methodology of the work we performed in reviewing the particular SSA systems project discussed.

In reviewing each of these five projects and the ADP and telecommunications resource acquisitions associated with them, we looked particularly for the existence of SSA systems problems similar to those identified in our prior reports.

During our review, SSA's priorities, plans, and actions in conducting its major ADP and telecommunications systems activities were constantly changing. For example, during our work SSA abandoned three of the systems projects we selected for review and redirected the other two. This instability in SSA's ADP environment complicated and delayed our review, since our audit efforts had to be redirected to correspond with the agency's changing ADP management strategy.

## CHAPTER 2

## LONGSTANDING WEAKNESSES IN ADP PLANNING AND MANAGEMENT AT SSA HAVE RESULTED IN RECURRING SYSTEMS-RELATED PROBLEMS

The quality of SSA's service to the public depends largely on how well its ADP systems operate. Because of the vital role these systems play in day-to-day agency operations, we have, over the past 8 years, reviewed and monitored various aspects of SSA's data processing and telecommunications activities. We found that SSA's ADP operations have long been hindered by numerous and varied problems, some very serious.

Certain of these problems have recurred regularly, and many--such as inadequate technical skills of ADP personnel, failure to thoroughly test and validate all ADP system modifications before implementation, and inadequate ADP program and system documentation--have been reported repeatedly over the years to SSA management by various organizations both within and outside the agency. For example, the lack of sufficient ADP program and system documentation at SSA has been reported to agency management by at least six different organizations since 1971. The continued existence of these problems points to ADP planning and management weaknesses at SSA over a number of years. In our view, the current ADP crisis (see ch. 5) is a direct result of these weaknesses.

Our work has identified four general categories of systems-related problems: (1) inadequate ADP-related planning, (2) improper development and modification of systems and software which result in erroneous processing, (3) deficiencies in acquiring and operating ADP equipment, and (4) failure to provide adequate privacy protection and security for personal records and systems components. These problems, discussed briefly below, are among various ADP-related and recordkeeping activities at SSA which we have discussed in 32 reports issued since 1974. Appendix I lists these 32 reports and a statement on our systems-related audit work at SSA which we presented during congressional testimony. Appendix II lists key recommendations we made in those reports. The recurring nature of major SSA systems problems is clearly reflected in this appendix, which shows that we have had to make many of our recommendations more than once.

Most of our work assessing how well specific systems function has been directed toward reviewing SSA's Supplemental Security Income (SSI) computerized system. Our reviews have shown that better use of ADP resources gives SSA excellent opportunities to better carry out its missions and program responsibilities.

## INADEQUATE ADP-RELATED PLANNING

Our work at SSA has identified agency ADP planning difficulties in three areas. SSA has failed to (1) justify plans for acquiring large-scale ADP equipment, (2) fully develop a comprehensive long-range agency plan upon which strategic ADP planning can be based, and (3) formally assess the risk of moving service-related ADP resources into its new computer center building before its completion.

### Unjustified equipment acquisition plan

We discussed the results of our 1976 review of SSA's computer facility needs in three reports (see app. I, items 3, 4, and 6). We found strong indications that certain agency computer systems were significantly underused, and we noted that poor operating practices and procedures were causing this apparent underuse. Also, inconsistencies existed between the agency's formal plan for acquiring and installing four additional large-scale computer systems during each of fiscal years 1977 and 1978 and its schedule for completing construction of a new computer building, in which these systems were to be installed. We thus questioned whether proceeding with the major hardware acquisitions planned could be justified. SSA later acknowledged that this acquisition plan was obsolete, suspended further efforts to acquire the large-scale systems, and hired consultants to study agency computer usage patterns and practices in detail so that actual agency computer needs could be determined. The agency reprogrammed $29.4 million appropriated for fiscal year 1977 computer acquisitions and included no funds in its fiscal year 1978 appropriations estimate for acquiring additional computer systems. We estimated this equipment would have cost at least another $28.7 million.

### Comprehensive long-range planning lacking at SSA

In September 1979, we reported (see app. I, item 21) that SSA's 1979 structural reorganization did not provide for the continuation of comprehensive long-range planning--a prerequisite to effective strategic ADP planning. Before that reorganization such long-range planning had been performed by a component SSA had established in response to a report we issued in 1974 (see app. I, item 2). In our September 1979 report, we again recommended that SSA assign this planning responsibility to a separate component reporting directly to the Commissioner. HEW and SSA acknowledged the need for continuing comprehensive long-range planning, but indicated that the agency would accomplish such continuation through the planning efforts of various existing functional components, possibly supplemented by a strategic planning group composed of key top-level agency managers.

We later learned that SSA's new Commissioner was about to decide how the agency's planning process should be structured. He was considering approval of a proposal to place primary planning responsibility within an existing agency component also responsible for other activities. Because we believed the planning function should be structurally located at a higher level and separated from other daily agency operations, we issued a report to the Commissioner in early July 1981 recommending changes to that proposed process in line with our earlier recommendations and those of a planning consultant SSA had hired (see app. I, item 31). SSA has not yet made a decision on how to structure its planning process, and a comprehensive long-range agency plan upon which to base SSA's strategic ADP planning efforts has yet to be developed.

### Relocation of service-related computer resources to proceed even though SSA's new computer center building not ready

In early September 1981 we reported on SSA's progress in relocating its central computer facility to its newly constructed computer center building. We recognized that generally SSA had recently planned and managed relocation activities well. We noted, however, that the agency was about to begin moving service-related ADP resources even though certain problems regarding the new building's readiness to accept computer operations had not been resolved. We felt this presented a potential threat to public service, and we recommended that, before proceeding, SSA have a formal risk analysis performed on the basis of building readiness and use this analysis to help determine whether its relocation schedule should be adjusted (see app. I, item 33).

## IMPROPER DEVELOPMENT AND MODIFICATION OF SYSTEMS AND SOFTWARE WHICH RESULT IN ERRONEOUS PROCESSING

Our work at SSA has identified system development problems at two levels--(1) in designing and developing computerized systems for States to use in administering their welfare programs and (2) in developing systems and software for the agency to use in administering various Federal programs.

### Problems in designing and developing computerized welfare systems

In May 1979, we reported (see app. I, item 17) that HEW's proposal for SSA to implement a computerized nationwide system for helping States reduce welfare fraud, abuse, and error should not be implemented until further studies were performed to clarify certain questionable aspects we identified. We noted that existing systems may already be performing the functions to be executed by

the proposed system, and we identified deficiencies in the cost-benefit analysis prepared for the proposal and in the plan for pilot testing the new system. In addition, SSA had not adequately sought user input during the system design, and the proposal featured a questionable data searching technique. We recommended that each of these issues be thoroughly assessed before the proposal was implemented. The Department indicated that further efforts to implement the proposed system would be suspended until it was reexamined.

We followed up on the Department's actions to implement our recommendations and reported our findings in April 1981 (see app. I, item 29). At that time it appeared that the system originally proposed would not be implemented and that the Department had taken little action to implement our recommendations. We noted, however, that the Department was evaluating draft legislative provisions that would establish an ADP system resembling that originally proposed, but detailed information on the development, uses, and costs of such a system was not then available.

In a June 1981 report (see app. I, item 30), we questioned HHS' readiness to ensure that mechanized claims processing and information retrieval systems developed by States for the Aid to Families with Dependent Children (AFDC) program will meet the requirements of Public Law No. 96-265. This law authorizes Federal payments to the States after June 1981 for 90 percent of costs incurred to plan, design, develop, or install statewide mechanized systems for administering the $11.3 billion AFDC program. We reported that the Family Assistance Management Information System (FAMIS) developed by SSA's Office of Family Assistance had not been tested to determine its feasibility and applicability as a model AFDC system. In addition, the performance standards and internal controls in FAMIS were inadequate, FAMIS did not facilitate compatibility with other welfare programs, and the Office of Family Assistance had not conducted an adequate cost-benefit analysis to demonstrate that savings would result in implementing the FAMIS standard on a State-by-State basis. We recommended that HHS defer implementing Public Law No. 96-265 nationwide until FAMIS was fully tested in several States. We also recommended that HHS develop better cost-benefit data on FAMIS and make certain changes to the FAMIS general systems design.

System development and software deficiencies in SSA's automated systems

Our numerous reviews of the SSI program over the last several years--aimed at reducing erroneous SSI payments as well as simplifying program administration--have concentrated on the automated SSI system. These reviews identified deficiencies in system development and software which have caused substantial erroneous

SSI payments. We have since identified similar problems in the other major automated payment system maintained by the agency--the RSDI system. We have made numerous recommendations for reducing these deficiencies in SSA's automated systems, but the agency has generally been slow to implement them.

Regarding system development deficiencies common to the SSI and RSDI computerized systems (see app. I, items 23 and 28), we noted that:

--SSA had not established a system development life cycle methodology for designing, developing, and modifying its computerized systems.

--Validations of new systems and modifications to existing systems were not made before implementation.

--Program and system modifications were not controlled so that adequate validations could be performed.

--Field office users' needs were not solicited as the basis for new systems or modifications to existing systems.

--Departmental auditors had neither participated in nor reviewed system design, development, and modification processes at SSA and had not reviewed automated controls in SSA computerized systems.

Regarding software deficiencies, our work has shown that SSA needs to be more conscious of the need to establish effective automated controls in its ADP systems. The following description of our work in the SSI and RSDI systems illustrates this finding in more detail. Also described are the results of our limited analyses of SSA's earnings system.

## Weaknesses in the automated SSI system

In a November 1976 report to the Congress (see app. I, item 5), we demonstrated how SSA could substantially reduce erroneous SSI payments by matching benefit data contained in the automated SSI system with similar automated benefit data maintained in Veterans Administration and Railroad Retirement Board files. By instituting such regular automated data exchanges, we projected that SSA will reduce SSI program overpayments by more than $100 million in fiscal year 1982.

In a September 1978 letter report (see app. I, item 10), we recommended that SSA begin using data readily available from the automated SSI system in reviewing initial program eligibility and subsequent eligibility redeterminations. We pointed out that such

use would allow the agency to discontinue using two computer forms for this purpose, thereby saving over $200,000 annually in administrative costs.

In a January 1979 report on improving the collection of SSI overpayments (see app. I, item 12), we noted that SSA district offices were responsible for providing each overpaid recipient with a written notice of the overpayment. We recommended that the SSI system be modified to provide automated overpayment notices directly to recipients when the overpayments were detected as a result of computer data exchanges with other Federal benefit-paying programs. In our view, such automated notices would (1) relieve the field offices from having to take time to manually prepare and mail written overpayment notices to every overpaid recipient and (2) assure that an overpaid recipient receives timely notification.

In a February 1979 letter report (see app. I, item 14), we recommended that information obtained from persons making oral or written inquiries about their possible eligibility for SSI benefits be incorporated into the existing SSI computerized system rather than manually documented and temporarily filed at the SSA field office receiving the inquiry. We noted that this would (1) eliminate duplicate claims processing steps required if the inquirer later filed a formal benefit application, (2) facilitate recordkeeping, and (3) provide a needed safeguard for detecting potential program fraud and abuse.

We reviewed SSA's efforts to process reported changes in SSI recipients' continuing eligibility factors once their initial eligibility for benefits has been established. We identified data processing and telecommunications system problems which prevented posteligibility changes transmitted by SSA field offices from being either posted to automated recipient records or returned to the field offices for later retransmission after appropriate followup action. SSA estimated these problems contributed to about $478 million in SSI overpayments. In a February 1979 report (see app. I, item 15), we made several recommendations aimed at correcting these problems by establishing certain controls in the automated SSI system. As of October 1980 SSA had made several system changes to improve control and processing of posteligibility changes, and several other automated controls were being developed (see app. I, item 26).

In August 1979 we reported (see app. I, item 19) that internal control weaknesses over the SSI computerized system had resulted in over $25 million in erroneous benefit payments to SSI recipients. We estimated that about $20 million of the erroneous payments occurred because of inadequate controls in the automated data exchange between the RSDI and SSI computerized systems. We also estimated that over $5 million of the erroneous payments occurred because of inadequate controls over the process by which

field office personnel manually calculate benefit payment amounts and use system overrides to bypass automated controls and payment calculations. We made 11 recommendations aimed at reducing payment errors by improving (1) the accuracy of beneficiary data within the system, (2) the automated interface with the RSDI system, and (3) controls over the forced payment process. 1/ As of August 1980, SSA had taken action on two recommendations and had begun to implement, at least in part, most of the other nine (see app. I, item 26).

In further discussing SSI system problems, we reported in October 1979 (see app. I, item 23) that SSA had not properly developed and maintained computer program and system documentation for the SSI computerized system. We recommended that SSA use existing program and system documentation standards and procedures developed by the National Bureau of Standards to guide documentation efforts.

In our most recent report on SSI overpayments, issued in February 1981 (see app. I, item 27), we noted that the current computerized information on resources owned by SSI applicants and recipients is insufficient for SSA to (1) effectively manage and monitor changes in resource ownership and values for those presently on the payment rolls or (2) contact previously denied applicants who may now be eligible because of legislative and administrative changes to the resource criteria. We concluded that more computerized information on the types and values of resources owned by recipients is needed by SSA claims representatives to reduce the overpayment problems resulting from nonreported resource ownership and value changes. SSA estimated that in fiscal year 1979 such overpayments amounted to about $36 million. We recommended that SSA develop and maintain detailed automated resource information to (1) include types and dollar values of resources owned by SSI applicants and recipients, (2) use the information to detect overpayments caused by changes in resource ownership and value, and (3) contact potentially eligible individuals as legislative and administrative changes occur, thereby enhancing SSA's outreach efforts.

### Weaknesses in the automated RSDI system

In December 1978 we reported on SSA's problems in detecting duplicate payments of RSDI benefits to students (see app. I, item 11). SSA had made 329 duplicate payments to students in

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1/When the system cannot process certain initial claims or post-eligibility events because of system limitations, field office personnel must manually calculate benefit payment amounts and force the system to make these payments.

May 1977, but later detected only 99 of them. One of SSA's two systems for detecting duplicate payments was not able to detect duplication in certain records, thus preventing the detection of duplicate payments and the independent application of the earnings test for working dependent children. We also identified records having duplicate SSNs recorded for two different individuals and found that this was due to SSA computer programming errors. The design of the other system, which matched records for exact duplication in first and last names, in month and year of birth, and generally in ZIP code, was not sufficiently flexible to identify potential duplication for names with slight differences in spelling. For example, the system did not identify records having identical SSNs as potentially duplicate if there was a slight difference in the spelling of the first or last names. We also questioned the value of matching ZIP codes for students since it appeared likely that a student would receive one check at school and the other at home, and we suggested ways for SSA to improve its procedures for correcting and cross-referencing its payment records once duplicate payment situations have been resolved. We recommended that SSA modify its duplicate payment detection system to correct these deficiencies.

In our January 1979 report on improving SSA's recovery of overpayments to RSDI beneficiaries (see app. I, item 13), we noted that SSA's RSDI subsystem for maintaining statistical information on overpayments did not provide enough of the type of information needed by managers to evaluate recovery efforts. We recommended that SSA immediately refine the subsystem's output to define the exact composition of the outstanding balance on unsettled accounts. As of December 1980 SSA had not implemented our recommendation because of a lack of staff and changing priorities (see app. I, item 26).

In a July 1979 letter report on SSA's procedures for adjusting benefits of persons having excess earnings (see app. I, item 18), we noted that, although SSA's earnings enforcement operation generates a notice of potential overpayment or underpayment when earnings reported by a beneficiary or employer exceed the allowable exempt amount, SSA often either took no action or failed to completely determine whether beneficiaries were actually overpaid or underpaid. We estimated that such cases represented about $39 million in potential overpayments and about $5 million in potential underpayments not identified by SSA. We concluded that increased controls in the computerized system could assure periodic followup and eventual completion of enforcement cases, and we recommended that such controls be placed in the system. SSA subsequently improved its control system for earnings enforcement cases, which should result in recurring savings of about $8.7 million annually (see app. I, item 26).

Our February 1981 report on SSA's attempts to redesign its RSDI automated system (see app. I, item 28) presents examples of significant erroneous processing by the computerized system. This erroneous processing has resulted in many Social Security beneficiaries receiving incorrect benefit payments and confusing payment notices, which have required considerable SSA field staff time to resolve.

In a July 1981 letter report, we presented the results of a limited survey to determine whether deaths of title II beneficiaries were being reported to SSA (see app. I, item 32). During this survey we matched death records from New York City and Kentucky with SSA's title II Master Beneficiary Record. Although our use of statistically sampled New York City death records did not identify any individuals in current pay status as of July 1981, our match of the computer tape containing the Kentucky death records with the Master Beneficiary Record identified nine deceased individuals who continued to appear in current pay status. We noted that the National Center for Health Statistics obtains death information--often in the form of precoded computer tapes--from every State, and we recommended that SSA work with the Center and the States to have (1) SSNs included on these precoded tapes and (2) the tapes made available to SSA for periodic matching against the Master Beneficiary Record.

## Problems in earnings system operations

One of SSA's most basic functions is to accumulate and maintain records of earnings for all employees covered under the Social Security Act. These earnings records are used to determine basic entitlement to, and amount of, Social Security benefits. Early in 1978 we began reviewing SSA's system for posting earnings to individual workers' accounts. Almost $69 billion in earnings reported to SSA since 1937 had not been credited to workers' accounts because SSA was unable to identify the individual accounts to which these earnings should be credited. We discussed this problem with SSA and demonstrated an automated technique we had developed for posting some of these earnings to the proper accounts. After a preliminary evaluation of our approach, SSA determined that it merited incorporation into its earnings posting operation. Our work in this area--and the concern expressed by the Chairman, House Committee on Government Operations, in a November 1978 letter to the Secretary of HEW--prompted the Commissioner of Social Security to issue a public statement in late February 1979 outlining a comprehensive five-point plan for improving the earnings posting process (see app. I, item 16).

Our October 1980 report on Internal Revenue Service computer processing of information returns (see app. I, item 25) discusses

other operational problems associated with SSA's automated earnings system.

## DEFICIENCIES IN ACQUIRING AND OPERATING ADP EQUIPMENT

Two of our reports--issued in January 1974 and March 1980 (see app. I, items 1 and 24)--pointed out weaknesses in SSA's administrative procedures for acquiring ADP and telecommunications equipment and made recommendations for strengthening these procedures. In addition, the March 1980 report offered suggestions to SSA for improving its efforts to monitor the status of these acquisitions on an ongoing basis. SSA has attempted to implement most of our recommendations in these areas.

As noted, we reported in 1976 and 1977 (see app. I, items 3, 4, and 6) that questionable computer operations practices and procedures were contributing to apparent significant underuse of SSA's large-scale ADP systems. The deficiencies we noted included (1) an apparent lack of knowledge of equipment capabilities displayed by computer operations personnel, (2) indifference by these personnel to meeting schedules for completing necessary tasks, (3) poor communication between personnel on succeeding shifts, and (4) dedication of computer groups to processing certain workloads exclusively, virtually never sharing work between groups. As a result of our work, SSA initiated overlapping shifts for computer operations personnel to improve communications between shifts and hired a computer systems expert to work with an ADP consulting firm to improve systems management, staffing, and development.

## FAILURE TO PROVIDE ADEQUATE PRIVACY PROTECTION AND SECURITY

Our reviews of SSA's records and systems security procedures indicate that better controls--both manual and automated--are needed to prevent program abuse and malicious acts of violence resulting from unauthorized access to agency facilities, records, and payment systems. Because they contain private, personal information necessary to support present and future Social Security benefits, SSA records constitute a valuable national resource that must be safeguarded against alteration, destruction, abuse, or misuse. To assure the Congress, the public, and beneficiaries that these records are properly safeguarded, adequate management support and an aggressive security program must be maintained. Since 1976 we have periodically reviewed the procedures and practices SSA uses to protect these resources.

During our 1976 review of SSA's central computer facility needs, we identified significant physical security weaknesses within the agency's central computer complex, and we reported

these deficiencies in May 1976 (see app. I, item 3). We recommended that SSA perform a security risk analysis for the facility and pointed out past inconsistencies in the agency's view toward security.

In November 1977 we reported (see app. I, item 7) on privacy issues surrounding the exchange of beneficiary information among Federal agencies. We concluded that the exchange of beneficiary information did not violate the Privacy Act of 1974 and was useful in properly administering various benefit-paying programs; however, we were concerned that security of the beneficiary data being exchanged may not be adequate. We recommended that SSA prepare a risk analysis to determine what security measures might be needed to protect the data it provides to other Federal agencies.

In February 1978 we again reported on security problems at SSA's central computer facility in Baltimore (see app. I, item 8). Although the agency had spent about $500,000 to install a new security system, the central computer facility was still not secure. Unauthorized personnel had access to the computer room and tape vault. Magnetic tapes, disk packs, and other property could be removed without proper authorization, and blank and valid Social Security cards could be easily taken from the computer facility. Adequate security procedures had not been established, and SSA had not made an in-depth study of its computer security needs with respect to the central facility, as we had recommended. We made a number of recommendations for eliminating individual security weaknesses, and we again recommended that SSA make a formal security risk analysis for the overall facility. As a result of this report, SSA corrected the physical security problems identified in the central computer facility.

In June 1978, we reported the results of our review of security procedures used to protect beneficiary records at SSA field offices and private insurance companies (see app. I, item 9). We found that better controls--both manual and automated--were needed within these offices to prevent unauthorized access to SSA's telecommunications system. Specifically, records maintained in automated data banks and files were not properly safeguarded against alteration, destruction, abuse, or misuse, and SSA did not have an ongoing centrally directed program to protect its records. There was unlimited and unrestricted access to telecommunications terminals, and users could create as well as query beneficiary files from most terminals. Further, SSA failed to (1) use audit trail features within the system, (2) incorporate user identification control techniques within the system, and (3) always lock terminals during nonworking hours. As a result of these security deficiencies, SSA had experienced instances of employee fraud and abuse. We recommended that the security weaknesses

identified be corrected and that SSA continue to pursue an active and aggressive security program.

In September 1979 we issued a followup report (see app. I, item 20) on computer security at SSA. That report discussed two previous reports and agency responses to our recommendations.

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In our view, top HHS and SSA management has not devoted adequate attention to our reports and those of other internal and external organizations pointing out major systems deficiencies, especially those of a recurring nature. Top managers need to assume a stronger role in this area if the longstanding cycle of recurring major systems problems at SSA is to be ended.

# CHAPTER 3

# SSA CAN IMPROVE ITS USE OF COMPETITIVE PROCEDURES TO ACQUIRE ADP AND TELECOMMUNICATIONS RESOURCES

Although we have not made a comprehensive analysis of SSA's ADP and telecommunications resource acquisition activities, we have reviewed certain SSA individual resource acquisition actions--including those pertaining to its current large-scale computers. The results indicate that the agency has relied considerably on other than fully competitive procurement procedures to acquire ADP and telecommunications resources. In our view, SSA should comply more fully with Federal procurement regulations by increasing its use of fully competitive procedures to acquire such resources.

## OBJECTIVES, SCOPE, AND METHODOLOGY

During our review of SSA's systems development plans and its effort to upgrade its telecommunications network, we looked at certain aspects of SSA's procedures for acquiring ADP and telecommunications resources, identified a number of deficiencies, and reported on them in March 1980 (see app. I, item 24). At that time, however, we did not assess the extent to which SSA had used competitive procurement procedures to acquire such resources. Because House Committee on Government Operations staff later expressed specific interest in this subject, we performed additional audit work to determine the extent to which SSA has followed Federal procurement regulations requiring the maximum use of competitive acquisition procedures.

Our review was based on (1) 60 1/ of the 61 agency ADP and telecommunications resource acquisition actions we had previously reviewed in detail and (2) agency data on its acquisitions of currently installed large-scale systems. We interviewed SSA systems and contract personnel involved in acquiring ADP and telecommunications resources and contacted representatives of certain ADP resource vendors. We also reviewed Federal procurement regulations and procurement documents--such as resource justifications, procurement requisitions, delegations of procurement authority, requests for proposals, and awarded contracts--contained in SSA contract files.

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1/We dropped one proposal from our analysis because of indications that it represented a non-ADP acquisition.

The 60 procurement actions we reviewed ranged from reimbursement of a contractor for lost time, to lease or maintenance agreement renewals, to software development assistance, to acquisition or replacement of large-scale computers. These 60 actions, however, did not constitute a statistical sample of ADP and telecommunication resource acquisitions at SSA; therefore, the results of our work cannot be used to make statistically valid projections on SSA's overall performance in using competitive acquisition procedures. In addition, for cases in which SSA had used other than fully competitive acquisition procedures, we did not determine whether a fully competitive acquisition would have been less expensive. Nevertheless, the results of our work, supplemented by the agency data we reviewed concerning the acquisition of currently installed large-scale systems, can be used as an indicator of SSA's compliance with Federal procurement regulations.

## SSA HAS NOT ALWAYS MAXIMIZED COMPETITION WHEN ACQUIRING ADP AND TELECOMMUNICATIONS RESOURCES

Federal Property Management Regulations (FPMR 101-35.206(c)) require that ADP-related specifications be designed to ensure free and open competition and equal opportunity and appropriate consideration to all responsive and responsible suppliers. These regulations are aimed at avoiding undue biases or predispositions which are prejudicial to free and open competition in the selection of ADP equipment. Similarly, Federal Procurement Regulations (41 CFR 1-4.1109-2) require that all ADP resource purchases and contracts be made on a competitive basis to the maximum practicable extent. For many of the procurement actions we reviewed, however, SSA used other than fully competitive acquisition procedures.

Of the 60 ADP and telecommunications resource acquisition actions we reviewed, 23 had been either canceled by SSA or replaced with other actions, and 2 others had not yet been finalized. In four other cases, sole-source contracts had been awarded to small disadvantaged businesses under section 8(a) of the Small Business Act. 1/ Of the remaining 31 actions, SSA had awarded fully competitive acquisition contracts in 11. In each of the other 20, however, SSA made acquisitions using other than fully competitive procurement procedures.

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1/Although such sole-source contract awards are authorized by law, prior GAO reviews show that Federal agencies have sometimes used the section 8(a) provisions to circumvent Federal procurement policies and regulations against noncompetitive procurements that would otherwise apply. As a result, the Government has incurred substantial excess acquisition costs in some cases. We did not determine whether SSA had used the section 8(a) provisions in these four cases to circumvent Federal requirements for competitive acquisitions.

Although SSA's use of other than fully competitive acquisition procedures seems reasonable in some of the cases we reviewed (such as when SSA renewed certain equipment maintenance agreements or hired a firm from which it was renting certain ADP equipment to relocate that equipment), use of such procedures in other cases appears questionable.

## SSA limited competition in acquiring a data base management system software package

In November 1978, SSA publicly announced its intent to acquire a user-oriented data base management system software package for its International Business Machines (IBM) Corporation and UNIVAC computer systems. Twenty-one firms requested SSA to send them copies of the formal vendor solicitation. However, SSA had combined the IBM and UNIVAC requirements, and in February 1979 issued a single vendor solicitation to enable SSA to benefit from the economies of scale which could result from a larger single acquisition.

By combining the two requirements, SSA appears to have limited competition. The agency received only one contract proposal and in November 1979 awarded a contract for about $267,000 to the vendor submitting that proposal. According to representatives from two other firms which had shown interest in SSA's initial proposal, the agency's solicitation requirement that one vendor supply software packages for both the IBM and UNIVAC equipment precluded their firms from submitting contract proposals because these firms could meet the requirements for only one of the two equipment manufacturers. One vendor representative said his firm contacted SSA to determine whether the agency would accept vendor proposals meeting only the UNIVAC or the IBM requirement, but was informed by SSA contracting personnel that such proposals would not be acceptable. He added that this was a sole-source acquisition, in his view, because only the firm ultimately receiving the contract award could meet the combined IBM/UNIVAC requirement.

We reviewed a technical analysis issued at about the same time that SSA developed its justifications for software packages for its IBM and UNIVAC systems. This analysis compared the key features of 15 leading data base management systems marketed by 12 different firms. The comparisons showed that nine of the systems could operate on SSA's IBM computers and two could operate on the agency's UNIVAC equipment, but only one--the package SSA subsequently acquired--could run on both.

SSA systems personnel could offer no technical reason requiring the combination of the separate IBM and UNIVAC capabilities into one vendor solicitation. They told us that, when it combined the two capabilities, SSA did not realize that this would cause a less competitive acquisition. We believe that, if SSA had accepted vendor proposals addressing either requirement separately, more firms may have been able to compete.

### SSA limited competition in purchasing disk storage equipment

In another case, the General Services Administration (GSA) gave SSA approval in November 1974 to enter into a sole-source lease agreement for using IBM disk subsystems, but on the condition that the agency competitively replace them within 12 months. GSA twice extended SSA's deadline for competitively replacing the IBM disk equipment, and SSA eventually awarded a competitive replacement contract. SSA actually released less than half of this disk capacity, however, continuing to lease and use the remainder for many months before finally purchasing it. The extended leasing period included 27 months during which SSA incurred lease costs of about $1.3 million despite having no lease authorization from GSA, and the lease extension helped SSA accumulate over $1 million in purchase option credits applicable to the cost of later purchasing the retained IBM disk equipment.

In April 1979 SSA publicly notified vendors of its intent to purchase the IBM disk equipment and the approximate net cost to make that purchase. The agency also invited alternative vendor proposals. Only one firm responded, and SSA concluded that this vendor could not meet the agency's delivery schedule. Thus, SSA purchased the IBM disk equipment in September 1980 at a net cost of about $335,000, after the application of accrued purchase credits.

We believe that SSA limited competition in meeting its disk storage needs by not competitively replacing all the IBM disk equipment it acquired noncompetitively, as originally agreed with GSA. Moreover, the purchase credits accrued during the 27 months in which SSA leased the retained disk equipment without authorization reduced the net cost of purchasing that equipment to a level that may have discouraged additional prospective vendors from submitting alternative proposals.

## SSA ACQUIRED MANY OF ITS CURRENT LARGE-SCALE COMPUTERS USING OTHER THAN FULLY COMPETITIVE PROCUREMENT PROCEDURES

SSA currently has 25 large-scale computer systems installed and operating in six program service centers and the central office in Baltimore. 1/ All 25 systems are Government owned, with title belonging to either SSA or GSA. According to SSA data, the agency acquired many of these systems using other than fully competitive procurement procedures.

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1/Twenty-two of these systems--16 in headquarters and 1 in each of the program service centers--support program operations, while the remaining 3 headquarters systems are used to process administrative workloads. At the time of our work, SSA was installing and testing an additional large-scale system in its new headquarters computer center building.

SSA records did not identify the method of procurement the agency used to acquire 11 of the older systems. Only 1 of the other 14 systems, however, had been acquired by fully competitive means, according to SSA data. Since 1975 SSA has acquired 12 large-scale central processors by using other than fully competitive means. SSA acquired most of these IBM and UNIVAC processors, currently in use at SSA headquarters, through make and model acquisitions.

In reviewing these acquisitions we noted an instance in which SSA has been particularly slow in competitively replacing equipment it originally acquired on a sole-source basis. In late 1977 HEW requested GSA to undertake a sole-source make and model acquisition of either a UNIVAC 1106 or a UNIVAC 1100/10 series computer system for use at SSA. GSA agreed to authorize and conduct this interim upgrade on the condition that HEW competitively replace the two UNIVAC 1108 multiprocessor systems then installed at SSA before the end of March 1981. GSA subsequently acquired a UNIVAC 1100/11 system (a specific system configuration within UNIVAC's 1100/10 series), which was installed at SSA in September 1978. However, the competitive replacement of the UNIVAC equipment has not occurred. SSA records show that work on the competitive replacement has been ongoing since 1977. These records further show that, as of February 1979, SSA's request for proposal for competitively replacing this equipment was about 95-percent complete. As of September 1981, however, this document had not been finalized, and SSA did not expect it to be issued before February 1982. According to an SSA systems official working on the replacement effort, the delay was due primarily to organizational changes resulting from SSA's 1979 structural reorganization and changes in top SSA systems management.

## SSA COULD PROVIDE FOR SYSTEM COMPATIBILITY THROUGH COMPETITIVE RESOURCE ACQUISITIONS

As noted, SSA has a history of acquiring large-scale computer systems through sole-source (make and model number) or limited competition (brand name or equal) acquisitions. In this regard, SSA's usual practice when assessing ADP capacity needed to support program operations has been to acquire IBM computer systems and to express requirements in terms that limit competition to IBM or IBM-compatible equipment. As a result, all 22 of the large-scale systems supporting SSA's program operations are IBM equipment. The agency's philosophy of expressing these requirements in terms of IBM equipment was exemplified in its January 1975 5-year large-scale computer procurement forecast for fiscal years 1976-80. That document, under which SSA acquired four IBM 370/168 computers for fiscal year 1976, clearly stated SSA's intent to remain in a large-scale IBM processing environment. The reason SSA cited for continuing IBM-compatible acquisitions was that acquiring non-compatible computers would require large software conversion costs

and application system redesigns. In this regard the agency indicated that, although it planned to redesign all its systems, this would require many years to accomplish, and until these redesigned systems were operational, the agency needed to maintain its present systems--presumably by retaining its current IBM hardware or compatible equipment.

The primary objective of this approach seems to be to avoid major application software conversion costs that would have to be incurred if its current equipment were replaced by non-IBM-compatible computers. This presents difficulties to SSA in striving for competitive equipment acquisitions, because system compatibility is crucial to the continuity of SSA's operations. It appears, however, that SSA has used the conversion cost issue in the past to completely avoid pursuing competitive equipment acquisitions. While we have acknowledged the need to consider conversion costs when buying computers, we have not suggested that the mere possibility of incurring such costs should be used as a blanket justification for continuing to purchase an incumbent vendor's equipment.

We have found that considering conversion costs would not necessarily eliminate competition and in fact should provide greater assurance that a lower total cost would result. In SSA's case, application software will apparently have to be substantially rewritten whether or not the agency continues to acquire IBM or IBM-compatible computer equipment. SSA's longstanding use of archaic programming techniques and its failure over the years to document its software adequately (discussed on pp. 4, 31, and 32) will make this effort time consuming, complex, and expensive. Thus, on a total system life-cycle cost 1/ basis, it is unclear whether conversion to another vendor's computers would be more or less expensive than substantially rewriting application software for IBM or IBM-compatible equipment.

SSA's most recent approach for replacing its large-scale computer systems indicates the agency's willingness to try to maximize competition while still ensuring that key systems are compatible. That approach, known as the "partitioning strategy," segments SSA's systems and workloads into several groups so that equipment is compatible within any group, but need not be compatible between groups. This would permit each segment of SSA's computer operations to be run on equipment of a different manufacturer.

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1/The sum of all anticipated or actual costs directly or indirectly associated with the design, development, installation, operation, and modification of an ADP system, less any residual value of purchased equipment at the end of its useful life.

SSA has planned to reassess this strategy because of its complexity and extended time frame for completion. Nevertheless, we believe SSA can and should maximize competition in determining the most cost effective way to upgrade its hardware and redesign its software. By rewriting application software using standard high-level programming languages and sound programming and documentation practices--which the agency must do regardless of whether it pursues fully competitive equipment acquisitions--SSA can prepare for future conversion and reduce conversion costs and the impact of conversion on system operations.

# CHAPTER 4

# SSA'S DECISION TO MODIFY ITS TELECOMMUNICATIONS UPGRADE PLAN SHOULD SAVE MILLIONS

Without the involvement of the House Committee on Government Operations, its staff, GSA, and our staff, SSA would not have revised its telecommunications network upgrade plan and would have acquired nonprogrammable terminals. This, in turn, would have constrained the telecommunications system to its current method of operation, with processing improvements possible only by hardware expansion at intermediary concentrator sites or at the central computer facility. Thus, SSA would not have met one of its major upgrade goals--to attain maximum flexibility for meeting future processing requirements. SSA has now achieved this added flexibility by revising its plan, which should enable the agency to save millions in field office staff costs and provide better service to the public by automating certain manual operations in field offices.

## OBJECTIVES, SCOPE, AND METHODOLOGY

As requested by the Chairman, House Committee on Government Operations, we reviewed SSA's plan to upgrade its telecommunications system. GSA withheld its approval of this plan at the Chairman's request pending the results of our work.

Our primary objective in assessing SSA's telecommunications upgrade plan was to ensure that the upgrade would provide adequate future flexibility to meet SSA's teleprocessing needs.

We reviewed SSA's Telecommunications Design Analysis document, which provided the justification for upgrading the telecommunications network and served as the basis for SSA's upgrade plan. We also reviewed numerous procurement documents--including agency procurement requests, detailed justifications, and delegations of procurement authority--associated with the upgrade, but especially those pertaining to three elements of the network: terminals, concentrators, and modems. 1/

We interviewed SSA systems personnel working on the upgrade, a consultant who helped prepare the Telecommunications Design Analysis, and SSA contracting personnel involved in acquiring the equipment needed for the upgrade. We also met with a representative of the vendor currently providing telecommunications-related services and discussed the upgrade with GSA officials.

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1/These devices are described on p. 24.

A GSA telecommunications engineer served as a key member of our review team. He made technical analyses of network traffic information to measure SSA's telecommunications workload and analyzed the costs and benefits of equipment alternatives. In addition, based on his prior analyses of the agency's network and comparisons of different makes and models of telecommunications equipment, he helped us identify equipment features which might be used to improve SSA field office operations.

## BACKGROUND

### SSA's telecommunications system is crucial to providing public service

SSA depends heavily on its telecommunications system to perform its mission. For example, field offices need timely access to data stored and processed at SSA's central computer facility in order to issue SSNs, maintain earnings records, take claims for program benefits, and process changes thereto. These field office requests for data and resulting responses from the central computer facility must be transmitted quickly. Without its telecommunications system, SSA would be virtually unable to provide timely service to millions of Americans, as well as to other Federal, State, and private organizations.

### Description of the system

SSA's present telecommunications system evolved over the past 15 years, dating back to 1966, when SSA entered into an interagency agreement with GSA to be a prime user of its Advanced Record System (ARS) network. Currently, the system is comprised of various types of equipment, some more sophisticated than others. Its primary components include:

--Three types of terminals for data entry: ARS teletypewriter equipment, SSA Data Acquisition and Response System (SSADARS) interactive video display units located primarily in local offices, and key-to-disk recording equipment in the program service centers.

--Modems (devices which interface between a computer device and a communication line) and local communication lines connecting the SSADARS terminals to the concentrators.

--Concentrators, or minicomputers, which receive data entry and query messages; condense, edit, and reformat them; send them on to the main host computers; and direct response messages to the proper field office terminal.

--High-speed trunk lines connecting the concentrators and the front-end processors.

--Front-end processors, which interface between the trunk lines and host computers by translating incoming data into a format acceptable to the hosts, and vice versa for output.

--Host computers, which process all data messages, direct all administrative messages to the proper destinations, provide on-line query access for the terminals, and provide output delivery to field office output devices.

### SSA's upgrade objectives and proposed approach

SSA developed an approach for upgrading its telecommunications system during 1976. Agency goals for the upgrade included assuring that the new system would be adaptable to future changes in processing requirements. In addition, SSA identified specific problems with the existing system which the upgrade was to solve. First, the SSADARS equipment--acquired in 1973 and approaching the end of its system life--broke down frequently and lacked self-diagnostic and certain security capabilities. Secondly, SSA had found ARS equipment to be slow, noisy, inefficient, and more costly to support than to convert to SSADARS. Next, the key-to-disk terminal equipment in the program service centers did not have on-line querying and edit capabilities and was not suitable for the program service centers' current operational structure. Finding it expensive and inefficient to operate these three terminal subsystems, SSA concluded that the most efficient and economical way to meet its telecommunications needs was by acquiring a single terminal system. In addition, SSA determined that modems and local communications lines would need to be upgraded and concentrator capacity increased to improve deteriorating system response time and to accommodate increasing workloads and future system expansion.

Thus, SSA's plan for upgrading its telecommunications system called for a new terminal, faster communications lines between the terminal and the concentrator, and an upgraded concentrator which could process transactions faster. The plan involved a phased replacement of all terminals with a new, more reliable, more secure version of existing SSADARS-type terminals at all field offices. Although this approach would have improved processing speed, provided uniformity in telecommunications processing, and increased security over data, it would not have increased terminal processing functions.

## SSA'S REVISIONS TO ITS UPGRADE PLAN SHOULD PROVIDE GREATER FLEXIBILITY FOR MEETING FUTURE REQUIREMENTS

In October 1979, after completing a detailed review of SSA's telecommunications upgrade plan, we briefed the Commissioner, other SSA staff, and Committee staff members on certain shortcomings of

the plan. During the briefing we expressed our primary concern--that the proposed terminal replacement called for acquiring a microprocessor-based, nonprogrammable device, which we felt could seriously restrict SSA's future data processing operations. In our view, the proposed nonprogrammable terminal was not easily adaptable to future changes in processing requirements and restricted the system architecture so that processing could be performed only in the concentrators and host computers, and not at local offices. In this regard we felt that SSA could achieve significant savings in its field office operations by performing certain data processing functions--such as the collection and reporting of district office management information--at the local level. Thus, we believed that SSA should modify its terminal replacement plans so that an "intelligent," programmable terminal could be obtained, thereby providing maximum flexibility for future agency data processing needs.

During the briefing, we also stressed the need for a "transparent communications conduit" 1/ between SSA's field offices and its central computer facility to provide flexibility for better meeting user needs and to preclude future terminal or host computer acquisitions from being competitively restricted by the current or upgraded concentrator system.

SSA officials generally agreed in concept with our recommendations, but took a strong stand in favor of proceeding immediately without revising their approach. They believed there was not enough time to modify the pertinent procurement documents to provide a programmable terminal, competitively acquire this equipment, and install it before April 1982, the expiration date of SSA's extended terminal lease and maintenance contract covering the existing SSADARS equipment. SSA pointed out that the existing SSADARS terminals were no longer operationally reliable and that by April 1982 they would have deteriorated to a point where they would no longer be maintainable. The agency added that continued use of the ARS terminals was hampering SSA's operations. Thus, although SSA officials agreed that agency operations would eventually require programmable terminals, they stated that obtaining such equipment would have to be deferred to follow-on acquisitions. In this regard they stated that work had begun on a comprehensive

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1/This refers to the concept of separating the telecommunications network from applications processing operations. From the perspective of applications programs, the telecommunications network is "transparent" in this type of arrangement because the applications programs and software systems function completely independent from the network; thus, they are not involved with network operational functions such as data routing and transmission speed. This facilitates communication among a wide range of incompatible terminals and computers.

plan to establish a future "data communications utility" 1/ for SSA by replacing all pertinent components of the telecommunications network.

Noting that we and SSA appeared to disagree only on what immediate actions SSA could or should take, the Committee staff suggested that we meet with SSA's technical staff to identify any mutually acceptable SSA actions to resolve the disagreement. During these meetings, most of the issues we raised during the October briefing were satisfactorily resolved. In a November 30, 1979, letter, the former Commissioner advised us of SSA's intent to modify its pending replacement terminal procurement document to incorporate provisions for programmable terminals and direct local storage. The letter stated that "SSA concurs that incorporation of these advanced features will provide the replacement terminal with greater systems life and future flexibility." The letter added that SSA was proceeding with the necessary functional requirements definition and associated cost justification process to incorporate our recommendations.

In December 1979, SSA's Office of Systems decided to proceed with acquiring a programmable terminal without direct local storage, but with the option of adding both more memory and direct local storage, depending on future legislative or technological requirements and the results of a concentrator network replacement study. This decision reflected difficulties SSA experienced in attempting to define functional requirements for a programmable terminal with direct local storage and to develop a cost justification, as referred to in the former Commissioner's letter. Among these difficulties were that (1) sufficient documentation of user needs for a programmable terminal had not yet been fully developed and (2) definitive long-range planning for the development of a future data communications utility had not been completed.

SSA believed this terminal replacement decision represented the most effective and unrestrictive approach to meeting its then undefined future needs. While we believed SSA should move aggressively to include programmable terminals and direct local storage in its revised solicitation document, we agreed that the agency would first have to fully cost justify the need for such capability, which would require additional analysis of its terminal replacement plan. We recognized that performing the required analysis at that time would have further delayed the terminal replacement, probably beyond the expiration date of the current SSADARS contract.

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1/This refers to a telecommunications network configuration approach in which all terminals and host computers are connected through a common "backbone" network capable of supporting all classes of telecommunications requirements. Such an approach can be used to achieve a "transparent communications conduit."

Therefore, we advised the Committee staff in January 1980 that we favored SSA proceeding immediately with its revised terminal solicitation to acquire a programmable device without direct local storage but with the option of upgrading both memory and storage as future plans and user needs become better defined. We also told the staff that we supported SSA's plan to replace existing modems to improve system response time.

SSA revised its terminal procurement documents to reflect its December 1979 acquisition strategy decision and issued an Agency Procurement Request to GSA in April 1980. GSA delegated procurement authority to SSA later that month. In March 1981 SSA awarded a terminal replacement contract, worth about $115 million, to Paradyne Corporation. An SSA contracting official told us in September that headquarters acceptance testing for the new terminals was successfully completed in June, but field office testing was still underway. He added that terminal installation should nonetheless be completed before the lease/maintenance contract on the existing SSADARS terminals expires.

In addition to the terminal replacement contract, SSA awarded contracts to replace the existing modems with faster ones, to increase the capacity of the concentrators, and to increase the speed of the trunk lines. All of these actions should help increase the speed at which messages can be processed, thereby improving field office operations. SSA also awarded a contract to Systems Architects, Inc., to help the agency prepare a more definitive long-range plan for developing a future data communications utility.

## Benefits of acquiring programmable terminals include saving millions in field office operations costs

Top agency officials have indicated that they consider SSA's revised terminal replacement procurement a major accomplishment in improving field office operations and service to the public and in modernizing SSA's computer facilities. SSA recognizes that, in providing for a programmable terminal, its revised strategy now includes greater flexibility for meeting future legislative or technological requirements and that, with these future changes, SSA can determine whether processing can best be performed locally or at agency headquarters. For example, 3 of SSA's 12 major long-range systems objectives, as presented in its September 1980 User Systems Support Plan for fiscal years 1981-86, are based on a prerequisite of acquiring local processing capabilities, which the new terminals can provide.

SSA's revised approach will provide a terminal with a system life 3 years longer than that of the nonprogrammable terminal called for in the agency's prior terminal replacement plan. Moreover, providing SSA field offices with new terminals having local

processing capabilities gives the agency an opportunity to save millions in field staff costs while providing better service to the public.

During 1980 SSA began defining user needs for the optional processing features of the new terminal. In October 1980, after receiving input from field office staff, the Office of User Requirements and Validation compiled a list of 10 proposed applications which could be processed locally by the programmable terminals. The Office's estimates for automating four of these applications identified a tangible reduction in field office personnel costs equaling 1,123 workyears per year beginning in fiscal year 1984. This represents over $133 million in savings over the system life, after full recovery of the costs of adding these optional processing capabilities. Further, intangible benefits of increased local office efficiency and adaptability to new processes were also identified. SSA has not yet estimated the additional potential savings associated with processing the remaining six applications at the local level.

## USING INCREASED CONCENTRATOR CAPACITY TO PROCESS APPLICATIONS SOFTWARE MAY BE DETRIMENTAL TO SSA

In analyzing SSA's planned concentrator upgrade, we noted that it was expected to add an estimated 50 percent more capability to the concentrators, some of which could be used for increasing user application programs at the concentrator level. In this regard we advised the Committee staff in January 1980 that SSA had just begun developing its long-range plan for moving toward a data communications utility and that, in our view, any expansion of user application programs within the concentrators should be suspended pending a firm decision on the proposed data communications utility. We believed that SSA should proceed with the concentrator upgrade, but on the condition that its purpose was to improve system response time and not to expand user applications.

In March 1980 SSA noted that the increased concentrator capacity was not intended to support additional user applications and that the future processing locations for application software within the telecommunications network would be determined by the design of the future data communications utility. In reviewing the budget submission to justify expanding local intelligence for the new SSADARS terminals, however, an SSA systems analyst recommended in March 1981 that the alternative of placing some of the identified local applications at the concentrator level be evaluated before funds are spent to acquire more local intelligence for the terminals. At that time the initial definition of the future data communications utility and the development of its functional requirements had not yet been completed. That information,

provided to SSA by Systems Architects, Inc., in a June 1981 report, seems to endorse the overall concept of a "transparent" communications conduit, as we discussed in our October 1979 briefing, but it does not specifically address the question of where applications programs might be processed in the network. It remains unclear whether application software will be processed within the concentrators in the future.

Although placing some of the identified local application programs in the concentrators could provide certain advantages, such as simplifying software maintenance, this approach also has disadvantages. First, it might not be in line with the "transparent conduit" concept. Extensive local processing in the concentrators could degrade system response time to unacceptable levels, thus inhibiting the system's ability to process existing telecommunications workloads and to accommodate increased workloads and future network expansion. In addition, since the "transparent conduit" concept facilitates communications among a wide range of otherwise incompatible terminals and host computers, placing applications software in the concentrators could, in our view, become a future barrier to fully competitive acquisition or replacement of terminals, concentrators, and host computers. We believe SSA should thoroughly address these factors when evaluating alternatives to expanding terminal intelligence.

# CHAPTER 5

# WHAT MUST SSA DO TO END ITS CURRENT ADP CRISIS AND PREVENT A RECURRENCE?

The magnitude, complexity, and recurring nature of SSA's ADP systems problems, as described in the preceding chapters, have culminated in an ADP systems crisis at the agency. Solving these problems--thereby ending the crisis--will require implementing a comprehensive corrective action plan, and SSA has already begun working on one. Developing an effective plan and then making it work, however, will require much better overall management of agency ADP systems activities than SSA has demonstrated in the past. This chapter describes the current crisis and specific items for inclusion in SSA's corrective action plan. It also contains our views on how the agency can strengthen its overall ADP management.

## ADP OPERATIONS AT SSA-- A CURRENT "CRISIS"

On May 22, 1981, the Commissioner of Social Security testified before the Oversight and Social Security Subcommittees of the House Committee on Ways and Means concerning SSA's ADP systems operations. The Commissioner described the current ADP situation at SSA as a "crisis in systems operations." He acknowledged serious deficiencies in computer software, inadequate hardware capacity, and systems personnel deficiencies. In a May 28, 1981, letter to the Subcommittees discussing SSA's ADP problems, the Secretary of HHS concurred with the Commissioner's observations, referring to SSA's overall systems situation as a "severe crisis." In addition to the deficiencies identified by the Commissioner and the Secretary, we have noted continuing privacy protection and security weaknesses within SSA's ADP systems operations.

### Software deficiencies

Both the Commissioner and the Secretary acknowledged that in the past SSA has opted to modify existing software systems, rather than take the time and effort to properly redesign existing systems or design new ones. Further, SSA has not used modern programming techniques, and none of the computer programs supporting SSA's basic operations are fully documented, if documented at all. Thus, SSA's software systems, according to the Commissioner and the Secretary, are a vast, complex patchwork--encompassing decades of different, archaic programming techniques--and are, as a result, very inefficient.

SSA's failure to correct these deficiencies has resulted in additional costs being incurred. First, since SSA's software systems have been written using archaic programming techniques and have not been properly documented, it is difficult, time consuming, and expensive--in terms of additional programming costs and interim manual processing costs until computer program changes can be completed successfully--to make software changes. Not only are such costs increased, but additional program costs are also incurred due to problems caused by incorrect software changes. This in turn results in incorrect and confusing notices to the public and erroneous payments to beneficiaries--problems requiring increased manual actions to correct. SSA records we reviewed refer to numerous recent software problems in the Manual Adjustment, Credits, and Awards Process system--one of SSA's largest transaction processing systems--which must be resolved before many cases can be processed.

Since SSA's software systems are inefficient, thus precluding efficient use of hardware, additional direct hardware or "machine time" costs have been incurred. As a result, the agency has used more hardware capacity than otherwise required. For example, in a September 1978 report, the MITRE Corporation identified instances of poor quality in SSA application programming, resulting in software inefficiencies which, when corrected, produced significant reductions in central processor time. In his testimony, the Commissioner referred to significant ADP production work backlogs and noted that SSA currently meets its production schedules about half the time. It appears that a significant cause of this situation is the additional computer time required for production runs due to software inefficiencies.

Inadequate hardware capacity

In his testimony the Commissioner referred to SSA's "outmoded and inefficient" computers and support equipment, noting that the agency's large-scale systems are no longer manufactured. Moreover, he indicated that SSA has a serious shortage of computer capacity and associated this shortage with production backlogs and the agency's inability to meet production schedules. He also noted that the Health Care Financing Administration continues to process its automated health insurance workloads on SSA's computers, which places further demands on SSA's systems resources. Further, the Secretary indicated that certain large-scale computers at SSA--such as its Test and Time Sharing Facility system--are saturated and that resolving this situation requires additional computer capacity.

As noted, SSA has recently been experiencing work backlogs and difficulties in meeting production schedules. However, our experience shows that determining the quantity and type of computer equipment that SSA actually needs to process a given workload requires careful and detailed analysis and consideration of many

factors. We have not performed such an analysis at SSA recently, but we would note that factors other than not enough equipment can have substantial impact on how much ADP capacity is available for workload processing. For example, the Federal Computer Performance Evaluation and Simulation Center reported in December 1980 that poor configuration of auxiliary storage devices on SSA's Test and Time Sharing Facility computer--which the Secretary referred to as "saturated"--was causing excessive central processor and peripheral device overhead, with the resulting appearance of saturation. As of early September 1981, SSA was still studying the Center's findings, according to an SSA systems official. Recovering additional processing capacity by correcting this type of problem primarily requires reconfiguring existing equipment, not acquiring more. In addition, as mentioned above, inefficient and erroneous software causes SSA to lose substantial computer capacity that would otherwise be available for production work.

Nevertheless, studies performed by SSA, the Center, and the MITRE Corporation since late 1980 show that upgrading main memory and tape drives should enable SSA to significantly increase the production processing capacity available to its existing large-scale computers while improving operational efficiency. Further substantial improvements could be achieved by eventually converting SSA's massive magnetic tape files to other data storage media, such as disk and mass storage.

Personnel deficiencies

The Commissioner and the Secretary referred to SSA's serious shortages of experienced ADP personnel, especially programmers and systems analysts. They described difficulties SSA has experienced during the last year, such as strong competition from private industry and the Federal hiring freeze, in trying to replace systems personnel. Data we reviewed showed that, during the 12- to 18-month period before June 1981, the overall annual attrition rate among SSA systems personnel was about 15 percent. Agency records show that 184 Office of Systems employees left the office between January 1980 and January 1981. Fifty-eight production programmers and analysts left between September 1980 and January 1981, and as of March 1981, there were 98 full-time permanent vacancies within the systems operations staff. Vacancies in supervisory positions are especially noteworthy. As of May 1981, 41 of 391 supervisory positions in the Office of Systems were vacant. These vacancies included 4 of the 8 Senior Executive Service positions and 8 of the 10 GS-9 supervisory computer operations personnel.

The Secretary noted that the loss of experienced programmers has been particularly devastating at SSA because of the special experience needed to work with the agency's complex, undocumented programs and archaic programming techniques. We agree with the Commissioner and the Secretary that even if SSA replaces these

personnel quickly, it will take some time for them to obtain the training and experience necessary to be productive within SSA's current systems environment.

In addition to staffing shortages, there appear to be problems with the level of technical skills of the systems personnel. Primary examples of this are the outmoded programming techniques still widely used at SSA and the poor configuration of peripheral devices on the Test and Time Sharing Facility computer. Also, we noted references by GSA and by current and former agency systems personnel to the need for SSA to (1) upgrade its internal ADP training programs to give systems employees the technical skills they require and (2) hire more qualified college graduates with computer science degrees and specialists with ADP procurement expertise.

There also appears to be a significant morale problem among SSA systems staff. The Secretary referred to SSA's steadily increasing attrition rate among systems personnel, especially programmers, during the last 3 years, noting that software development having tight implementation time frames has been performed under intense pressures with extraordinary overtime demands. In addition, former agency systems officials have acknowledged that, during their tenures in 1979-80, recurring structural organization problems in SSA adversely affected systems staff morale, and current managers at different levels within SSA's systems organization recently told us of continuing morale problems among ADP staff.

According to one former official, systems staff resisted the efforts of management to obtain needed technical skills through contractor support. Similarly, a current manager told us that the systems staff has lost the sense of teamwork it once had because recent outside hires and veteran SSA systems staff have developed a strong mutual animosity. Further, recent agency data we reviewed indicated that SSA computer programmers continue to fear that Office of Personnel Management classification standards for computer specialists will eventually cause widespread downgrading of positions. According to those data, the frustration and disenchantment felt by the software development staff must be viewed as the primary cause of the high programmer/analyst attrition rate. In addition, between February 1977 and February 1981, SSA recorded 45 acts of apparent vandalism inside the ADP secure area.

## Continuing privacy protection and security weaknesses

SSA systems operations continue to be subjected to privacy protection and security weaknesses. For example, during the past year the HHS Audit Agency has issued four reports on privacy protection and security problems at SSA. In addition, SSA has recently

been processing backlogged production work, including beneficiary earnings data, in its new computer center. As of late September 1981, however, the automated security system for the new building was still not operational. In addition, actual construction--including completion of the lobby, which is very important to the building's overall security--was still underway, rendering the new computer center less secure than the current facility, in the opinion of an SSA systems security official.

SSA has continued to emphasize improved physical security as one of the primary benefits associated with relocating agency computer operations to the new building. The agency expects the new computer center to provide a more secure ADP environment primarily because it will feature a sophisticated, minicomputer driven security system costing about $4 million. However, as we noted in one of our 1976 reports (see app. I, item 3), the competency and reliability of personnel working in an ADP installation is the key to effective security, and personnel incompetency and carelessness cannot be eliminated at SSA simply by relocating the computer operation to the secure environment of the new building. For example, during tours of the new center in June and August 1981, we observed indications of inadequate security awareness in certain personnel already working there. Such awareness should have been especially keen since SSA was conducting ADP operations in the new center even though the automated security system was not operational.

## Failure to end the crisis will produce serious consequences

As described, SSA systems managers have been operating in a crisis-oriented, reactive mode rather than employing planned approaches to problem solving and resource management. In this regard, the Secretary noted in his May letter that SSA's emphasis during the past year has been on managing immediate critical workloads, or "survival projects," leaving few resources available to work on the problems plaguing SSA's current ADP environment or to plan for future systems needs. The Secretary added that any new legislation requiring ADP support is going to increase the systems backlog and continue the need for manual processing, in whole or in part, of workloads that should be automated. Such manual processing is time consuming and very costly. For example, one provision of the Omnibus Budget Reconciliation Act of 1981 eliminates the minimum Social Security benefit for all current and future beneficiaries. SSA estimates that this change will not only cost at least $150 million for manual implementation, but also consume about 1,200 hours of computer time. 1/ These computer requirements

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1/At the time of our work, the Congress was considering proposed legislation to reinstate the minimum benefit for many current recipients.

will severely restrict SSA's ability to carry out (1) basic program requirements, such as posting of earnings to individual wage earners' accounts, which is already far behind schedule, and (2) major efforts to improve system operations and computer security, such as relocating its central computer facility to its new computer building. In addition, manual benefit calculations have in the past proven to be error prone.

The current crisis situation is very complex and cannot be corrected overnight, primarily because it has resulted from operational and management problems occurring over a long time. If SSA continues to use patchwork solutions to respond to program changes, computer processing problems will continue to grow and no long-term solution will be achieved. Failure to overhaul its systems will result in continued and ever-increasing systems problems--both automated and manual--which will further decrease SSA's ability to provide timely and accurate service to the American public.

## SSA IS DEVELOPING A COMPREHENSIVE PLAN TO DEAL WITH ITS ADP PROBLEMS

During his May 1981 testimony, the Commissioner referred to several short-term agency actions then underway which he believed would help lessen the software, hardware, and personnel problems plaguing SSA's ADP systems and operations. These included:

--Undertaking a more disciplined, structured approach to documenting computer software.

--Proceeding with the nationwide telecommunications network upgrade.

--Proceeding with the purchase of more computer memory capacity, which is expected to provide greater flexibility in scheduling production work and more time for testing and validating new software.

--Exploring innovative but acceptable ways of further augmenting computer capacity to process current as well as future workloads. Among the alternatives being considered by SSA were (1) acquiring additional computers (as of early September, SSA had acquired and was preparing to install in its new building an IBM 370/168 multiprocessor released by the National Institutes of Health); (2) leasing computer time from commercial sources or other Government computer centers (as of early September, SSA was negotiating a time-sharing agreement with the Air Force's San Antonio Data Services Center); and (3) adopting a plan under which SSA would release its older, less efficient large-scale computers and retain the three IBM 370/168 computer systems acquired specifically for relocating the agency's ADP

operations to its new computer center building (as of early September, SSA was awaiting GSA approval of this plan).

--Conducting computer programmer training classes for selected agency employees and stepping up efforts to recruit critically needed systems personnel. (SSA's current budget request includes funds for rewriting application software and implies that some of this work may be performed by outside contractors. 1/ This request also provides for an increase of about 700 full-time systems personnel by the end of fiscal year 1982.)

--Proceeding with the relocation of SSA ADP operations to the new computer building, which SSA believes will provide a more reliable and professional work environment, improve the morale of systems personnel, and provide greater security.

The Commissioner added that SSA would also be closely examining other short-term potential systems improvements, such as rapidly replacing all current agency computers with only a few larger and more modern computers and replacing SSA's predominant use of magnetic tapes for data storage with greater use of disk and/or mass storage technology.

Nevertheless, the Commissioner noted that SSA's overall systems problem will require a long-term solution involving improvements to both hardware capacity and software design. In this regard, he indicated his intent to review all options available to deal with each element of the problem and then develop a longer term strategy for solving them. This comprehensive plan is to include:

--Reassessing SSA's current procurement strategy to ensure that the approach ultimately adopted by the agency will (1) promote cost-effective solutions to long-term systems problems, (2) take maximum advantage of technological advances, (3) permit adequate time for redesigning the agency's software to attain a more efficient software and hardware design, and (4) encourage competition.

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1/The effectiveness of Federal agency contracting for software development depends on (1) correctly determining what specific development work has been satisfactorily completed at the point of contracting and (2) developing and managing the contracts very carefully, as discussed in our report entitled "Contracting for Computer Software Development--Serious Problems Require Management Attention To Avoid Wasting Additional Millions" (FGMSD-80-4, Nov. 9, 1979).

--Identifying the resources required to maintain SSA's current system as well as those needed to redesign it, with the purpose of making definitive resource allocations to each of these two activities.

--Reexamining SSA's total planning process.

At the time of his testimony, the Commissioner hoped to have this plan completed within 6 months. As of early September the agency had almost completed the initial draft of a general plan, according to systems personnel. This plan is to consist of three distinct phases--short-range, intermediate, and long-range--and serve as the basis for a number of more detailed subplans directed at specific problems. Completion of the formal plan, however, was still apparently several months away at the time of our work.

## THE PAPERWORK REDUCTION ACT OF 1980 SHOULD HELP SSA IMPLEMENT ITS ADP PLAN

The Paperwork Reduction Act of 1980 (Public Law No. 96-511, 94 Stat. 2812, codified at 44 U.S.C. 3501 et seq.) seeks to ensure that Federal agencies acquire and use ADP and telecommunications technologies in a manner which improves service delivery and program management, increases productivity, maintains standards of information privacy, reduces waste and fraud, and reduces the information processing burden wherever possible for both the Federal Government and those providing information to the Government. To this end, the act focuses on improving information management by requiring each agency to appoint a senior official responsible for carrying out all information management activities efficiently, effectively, and economically. HHS has designated a departmental information resources manager, but as of early September, no such official had been appointed for SSA.

In late September, however, the Office of Management and Budget (OMB), which has overall responsibility under the act for overseeing the information resources activities of Federal agencies, stated that responsibility for overseeing SSA's system-related activities is now shared by HHS' senior official for information management and by the Commissioner of SSA, whose responsibilities for these activities are to continue as in the past. According to OMB, it will monitor HHS and SSA efforts to strengthen and redesign the agency's systems and will provide advice and guidance on information resources activities. This is to include careful review of SSA's comprehensive corrective action plan. However, OMB does not plan to dictate the methods or actions necessary to obtain an effective system. Such involvement by OMB and HHS should not only help improve SSA's ADP management, but also provide the basis for the agency receiving the executive branch assistance and support it needs when implementing its comprehensive ADP corrective action plan.

## CONCLUSIONS, RECOMMENDATIONS, AND MATTER FOR CONSIDERATION BY THE CONGRESS

### Conclusions

SSA's current multifaceted ADP crisis has resulted from long-standing weaknesses in agency ADP planning and management. More specifically, SSA has been substantially deficient in (1) performing effective agency and systems planning, (2) developing and modifying ADP systems and software, (3) acquiring and operating ADP equipment, and (4) providing adequate privacy protection and security.

We are encouraged that SSA has acknowledged the existence, seriousness, complexity, and multifaceted nature of its ADP systems problem. Moreover, the agency now realizes that, to solve this problem, it will have to not only pursue short-term actions to survive the immediate crisis concerning software, hardware, and systems personnel, but also develop a long-term plan of corrective actions to prevent the problem from recurring. In this regard, we note that top agency management has pledged to solve both the short- and long-term aspects of this problem in developing its comprehensive corrective action plan.

We have supported SSA developing a long-range approach to systems planning since 1974. We continue to believe, however, that developing a comprehensive agencywide, long-range plan is a prerequisite to effective long-range ADP planning. As discussed in chapter 2, SSA has still not developed such an agency plan. Without such a plan on which to base its strategic ADP planning, we believe that SSA's ongoing efforts to develop a long-range solution to its current ADP problems are unlikely to respond adequately to its emerging long-term program and systems needs.

We believe SSA's comprehensive corrective action plan should include provisions for prompt and full implementation of all still-applicable recommendations for improving SSA's systems, as presented in our prior reports and numerous studies by other organizations. If properly developed and implemented, this plan should go a long way toward putting SSA's systems on the road to recovery. Developing effective plans and making them work, however, are monumental tasks which will require much better overall ADP planning and management than SSA has demonstrated in the past. To succeed, SSA will need support and assistance not only from OMB, HHS, GSA, and the Office of Personnel Management--which should be enhanced by compliance with the Paperwork Reduction Act of 1980--but also from the Congress.

## Recommendations to the Secretary of Health and Human Services

The following recommendations to the Secretary should help HHS and SSA develop and finalize an effective corrective action plan. We have separated these recommendations into three categories: (1) short-term, (2) long-term, and (3) general (both short- and long-term).

### Short-term

We recommend that the Secretary direct SSA, in cooperation with HHS' senior official for information resources management, to:

--Supplement existing systems staff with outside ADP support wherever applicable, but especially for the rewriting of existing application software and the development of new application programs. In all such cases, however, SSA should correctly determine the status of software development at the point of contracting and then develop and manage the contracts very carefully.

--Reexamine current large-scale systems, identify those having poor equipment configurations causing excessive overhead, and reconfigure this equipment wherever possible.

--Carefully screen prospective suppliers of computer time to make sure they can provide adequate privacy protection and security for SSA data.

--Determine whether the potential disadvantages associated with processing future application programs in the concentrators--(1) deteriorating response times and (2) competitive upgrade/replacement restrictions--outweigh the advantages of this approach, such as simplifying software maintenance, before deciding where in the telecommunications network such future applications may be processed.

### Long-term

We recommend that the Secretary direct SSA, in cooperation with HHS' senior official, to:

--Complete the structuring of SSA's comprehensive long-range planning process.

--Begin to plan for completely redesigning SSA's major ADP systems, including competitive replacement of hardware, to correspond with the overall agencywide plan.

General

We recommend that the Secretary review all prior GAO recommendations for improving SSA's systems, as listed in appendix II, and implement those still applicable. HHS should similarly review the numerous other systems studies performed at SSA and implement their recommendations as appropriate, especially those directed to solving recurring problems.

Matter for consideration by the Congress

In view of the magnitude, complexity, and recurring nature of SSA's ADP problems, we believe that the Congress should periodically review SSA's efforts to develop and implement its ADP corrective action plan.

APPENDIX I

## CHRONOLOGICAL LIST OF GAO REPORTS AND TESTIMONY

## FROM JANUARY 24, 1974, TO SEPTEMBER 1, 1981,

## ON ADP-RELATED ISSUES AT SSA

| | Identifying number | Date issued | Addressee | Title (or subject) |
|---|---|---|---|---|
| 1. | B-164031(4) | 01/24/74 | Secretary, HEW | Improving the Acquisition of Computer Systems |
| 2. | B-164031(4) | 04/19/74 | The Congress | Increased Efficiency Predicted If Information Processing Systems of Social Security Administration Are Redesigned |
| 3. | None | 05/14/76 | Commissioner, SSA | Letter report on computer utilization, security, and construction of a new computer facility 1/ |
| 4. | HRD-77-8 | 11/17/76 | Chairman, House Government Operations Subcomcomittee on Intergovernmental Relations and Human Resources | Letter report on allegations questioning the need for SSA's proposed computer facilities building 1/ |
| 5. | HRD-76-159 | 11/18/76 | The Congress | Supplemental Security Income Payment Errors Can Be Reduced |
| 6. | HRD-77-97 | 06/03/77 | Congressman William L. Armstrong | Letter report on computer operations at SSA and long-term agency plans to redesign its ADP systems 1/ |
| 7. | HRD-77-110 | 11/15/77 | Congressman John E. Moss | Privacy Issues and Supplemental Security Income Benefits |
| 8. | HRD-78-73 | 02/21/78 | Acting Commissioner, SSA | Letter report on physical security weaknesses in SSA's central computer facility |
| 9. | HRD-78-116 | 06/05/78 | Congressmen Charles Rose & John Moss | Procedures To Safeguard Social Security Beneficiary Records Can and Should Be Improved |
| 10. | None | 09/18/78 | Acting Commissioner, SSA | Letter report on replacing the SSA-8080 and SSA-8081 with the redesigned SSIRD |

| Identifying number | Date issued | Addressee | Title (or subject) |
|---|---|---|---|
| 11. HRD-79-27 | 12/22/78 | Secretary, HEW | Letter report on SSA's problems in detecting duplicate payments of RSDI benefits to students |
| 12. HRD-79-21 | 01/16/79 | Senator William Proxmire | Social Security Should Improve Its Collection of Overpayments To Supplemental Security Income Recipients |
| 13. HRD-79-31 | 01/17/79 | The Congress | Social Security Administration Should Improve Its Recovery of Overpayments Made To Retirement, Survivors, and Disability Insurance Beneficiaries |
| 14. None | 02/06/79 | Commissioner, SSA | Letter report on needed improvements in the SSI inquiry and application processes |
| 15. HRD-79-4 | 02/16/79 | Secretary, HEW | Erroneous Supplemental Security Income Payments Result From Problems in Processing Changes in Recipients' Circumstances |
| 16. None (testimony) | 04/09/79 | Chairman, Senate Finance Subcommittee on Social Security | Statement of the Director, HRD, on GAO Recommendations for Improving the Management of Social Security Administration Programs 1/ |
| 17. HRD-79-88 | 05/29/79 | Secretary, HEW | Letter report on HEW's proposed implementation of a computerized National Recipient System 1/ |
| 18. HRD-79-89 | 07/02/79 | Secretary, HEW | Letter report on SSA's procedures for adjusting benefits of persons having excess earnings |
| 19. HRD-79-104 | 08/09/79 | Secretary, HEW | Flaws in Controls Over the Supplemental Security Income Computerized System Cause Millions in Erroneous Payments |
| 20. HRD-79-114 | 09/04/79 | Chairman, Senate Committee on Governmental Affairs | Followup on Computer Security at the Social Security Administration |

| Identifying number | Date issued | Addressee | Title (or subject) |
|---|---|---|---|
| 21. HRD-79-118 | 09/20/79 | Secretary, HEW | The Social Security Administration Needs To Continue Comprehensive Long-Range Planning 1/ |
| 22. HRD-79-126 | 10/02/79 | Senator Henry Bellmon | Review of Department of Health, Education, and Welfare Guidelines for Acquiring Automatic Data Processing Systems Under the Social Security Act |
| 23. HRD-80-5 | 10/16/79 | Secretary, HEW | The Social Security Administration Needs To Develop a Structured and Planned Approach for Managing and Controlling the Design, Development, and Modification of Its Supplemental Security Income Computerized System |
| 24. None | 03/31/80 | Commissioner, SSA | Improving Social Security Administration Procedures for for Acquiring ADP and Telecommunications Resources 1/ |
| 25. FGMSD-81-4 | 10/20/80 | Chairman, House Government Operations Subcommittee on Commerce, Consumer and Monetary Affairs | IRS Can Expand and Improve Computer Processing of Information Returns 1/ |
| 26. HRD-81-37 | 12/31/80 | The Congress | Implementing GAO's Recommendations on the Social Security Administration's Programs Could Save Billions |
| 27. HRD-81-4 | 02/04/81 | The Congress | Millions Can Be Saved by Identifying Supplemental Security Income Recipients Owning Too Many Assets |
| 28. HRD-81-47 | 02/06/81 | Secretary, HHS | Social Security Needs To Better Plan, Develop, and Implement Its Major ADP Systems Redesign Projects 1/ |

| Identifying number | Date issued | Addressee | Title (or subject) |
|---|---|---|---|
| 29. HRD-81-89 | 04/27/81 | Senator Max Baucus | HHS' Action To Implement GAO's Recommendations Concerning the National Recipient System Has Been Curtailed--A New System Is Being Proposed 1/ |
| 30. HRD-81-119 | 6/29/81 | Secretary, HHS | Concerns About HHS' Ability to Effectively Implement Incentive Funding for State Information Systems in the Aid to Families with Dependent Children Program |
| 31. HRD-81-120 | 7/2/81 | Commissioner, SSA | Social Security Should Change Its Proposed Process for Conducting Comprehensive Long-Range Planning 1/ |
| 32. HRD-81-113 | 7/28/81 | Commissioner, SSA | Impact of State Death Information on Federal Income Security Programs |
| 33. HRD-81-134 | 9/1/81 | Chairman, House Committee on Government Operations | Relocating Social Security's Central Computer Operations: Recent Agency Planning and Management Has Been Good, but Further Precautions Should Be Taken To Reduce Risks 1/ |

1/ Contains information on ADP activities at SSA developed during audit work performed at the request of the House Committee on Government Operations or its subcommittees.

## KEY RECOMMENDATIONS IN GAO REPORTS FOR IMPROVING ADP PLANNING AND MANAGEMENT AT SSA 1/

### ADP PLANNING/MANAGEMENT WEAKNESS: INADEQUATE ADP-RELATED PLANNING

To facilitate systems redesign, we recommend that SSA:

--Establish long-range goals and objectives to guide the system designers in integrating functions of different offices and bureaus.

--Establish an expert system planning group, freed from changes caused by day-to-day operations and legislative changes, to design and develop new information processing systems which will take full advantage of the technological capabilities of modern computers.

--Direct the system designers to make an in-depth examination of alternative methods for storing, maintaining, and processing SSA data files and programs--methods that are operationally beneficial and technically feasible (see app. I, item 2).

We recommend that the Secretary direct the Commissioner to assign responsibility for formulating and implementing comprehensive long-range plans to a single SSA component which reports directly to the Commissioner and is not responsible for managing or supporting daily operations. Such action would better assure that SSA continues comprehensive long-range planning and maintains an organizational component capable of establishing appropriate long-range operational goals and objectives to meet ever-changing program demands (see app. I, item 21).

For the reasons discussed in our earlier reports, we recommend that the Commissioner assign SSA's planning support staff to the Office of the Commissioner, reporting directly to the Commissioner or a Deputy Commissioner. If, as is currently being considered, the Commissioner assigns the staff to the Executive Planning Committee, we propose, for reasons stated by an SSA consultant, that it be assigned solely to this committee and that the committee be

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1/This appendix lists only those key recommendations we have made on ADP planning and management issues at SSA--arranged in accordance with the four categories of ADP-related weaknesses presented in chapter 2. The agency has fully implemented several of these recommendations, partially implemented others, and has not acted on the rest. However, we have not attempted to determine the current implementation status of these recommendations.

chaired by a top agency official. In addition, we recommend that the Commissioner assign primary responsibility for formulating comprehensive long-range plans to that staff, and supplement its present personnel with representatives detailed from each operating component, including key field offices, to assist in this planning effort (see app. I, item 31.)

ADP PLANNING/MANAGEMENT WEAKNESS:
IMPROPER DEVELOPMENT AND MODIFICATION
OF SYSTEMS AND SOFTWARE

Systems development/modification deficiencies

Certain aspects of the National Recipient System (NRS) should be clarified and its costs and objectives should be thoroughly assessed before implementation begins. We recommend that the Secretary direct the Commissioner to:

--Assess the need for NRS to perform a nationwide search of AFDC rolls to detect duplicate payments rather than State-initiated matches with neighboring States or jurisdictions using the Interjurisdictional Data Exchange model or other appropriate techniques. In this regard, SSA should analyze the results of Project Match to determine the extent to which duplicate payments occurred in neighboring States.

--Fully assess the need for a new system, NRS, to verify SSNs for the current AFDC caseload and consider alternate means of verifying accretions, such as the Electronic Verification of Alleged Numbers system.

--Develop a detailed cost and feasibility comparison of developing, implementing, and operating NRS, as opposed to using information currently available or, if needed, expanding current Federal/State data exchange systems (e.g., State Data Exchange and Beneficiary Data Exchange). Consideration should be given to the desire and need for a new and separate file being provided to the States that will duplicate currently provided information and burden the States with additional verification and records security responsibilities.

--Expand initial implementation of NRS to include additional States with less than optimum characteristics, as well as all proposed Federal interfaces, and test the complete process from systems implementation to verification of output. This test will provide more realistic and representative results for evaluation and better information for making decisions on full implementation.

--Provide States with enough information about NRS and associated costs so they can make their own cost and savings projections. These, combined with SSA's projections, will provide more representative cost/savings estimates.

--Solicit States' opinions about the need for and cost effectiveness of NRS and determine their receptiveness to such a system.

--Fully assess the feasibility of using the SSN rather than the name for file searching in NRS (see app. I, item 17).

To overcome weaknesses in the computerized SSI system, we recommend that the Secretary direct the Commissioner to:

--Establish a structured, management-controlled approach, such as the system development life-cycle technique, to the system design, development, and modification process.

--Use existing program and system documentation standards and procedures provided by Federal Information Processing Standards of the National Bureau of Standards.

--Provide management support to ensure that the systems validation group has enough staff to thoroughly perform the systems validation function.

--Establish control procedures for the systems validation group so that it can have an effective means for controlling program and system modifications.

--Establish procedures to ensure that users actively participate in the entire system design, development, and modification process.

We further recommend the Secretary direct the Inspector General to have the Audit Agency:

--Expand its efforts to include the review of automated system controls.

--Actively participate in reviewing the system design, development, and modification process (see app. I, item 23).

Because we identified similar deficiencies in the redesigned RSDI computerized system, we believe the Secretary should direct the Commissioner to assure that major systems development/modification efforts are planned, developed, validated, and approved before implementation in accordance with generally accepted systems development/modification criteria. Specifically, the Commissioner should require:

--Quick finalization and implementation of detailed agency procedures for communicating with system users.

--Periodic updating, including revision of priorities, of the existing inventory of user needs to make sure it is current and accurate and can serve as a reliable basis for future development of system modification proposals.

--Periodic updating and modification of initial cost/benefit analyses for all major systems proposals, maintenance of accurate records of costs incurred and benefits realized to facilitate this updating, and use of these data to periodically reevaluate the merit of proceeding with the system change.

--Provision for project leaders of major systems development/modification efforts to be assigned full time to managing such projects and conducting them apart from daily systems operations.

--Revision of SSA's interim validation guidelines to include more detailed procedures and standards covering test case selection and inclusion of invalid data for testing program controls, testing changes throughout the system, determining the degree of processing accuracy that must be attained before implementation may proceed, and allocating sufficient staff time to validating system changes.

--Assessment of the independence maintained by systems validators from systems development staff, to make sure that they have sufficient control over program and systems changes, especially seeing that formal validation procedures are followed.

--Participation by all users in establishing the functional requirements for proposed systems changes to ensure that these requirements can serve as the system performance criteria against which validation is conducted.

The Secretary should also direct the Inspector General to increase efforts to establish sufficient ADP audit capability within the Audit Agency so that reviews of SSA's system development/modification process and ADP systems audits can be carried out effectively at SSA (see app. I, item 28).

Software deficiencies

To reduce SSI payment errors, we recommend that the Secretary direct the Commissioner to:

--Obtain accurate and complete compensation and pension information on a timely and continuing basis from the Veterans Administration and the Railroad Retirement Board for computing SSI payments.

--Review other Federal benefit payments to SSI recipients, such as Civil Service Commission retirement benefits, to determine the need for and feasibility of obtaining benefit information from other agencies.

--Establish, where appropriate, a system to insure that information on benefits paid to SSI recipients by Federal agencies will be obtained on a timely and continuing basis for future payment computations (see app. I, item 5).

To save administrative costs incurred in clearing SSI initial claims and performing SSI redeterminations, we recommend that the redesigned Supplemental Security Income Record Display, appropriately annotated to distinguish it between initial claims review and redeterminations, be provided to field offices (see app. I, item 10).

To provide a stronger and more active management role in recovering SSI overpayments, we recommend that the Secretary direct the Commissioner to develop an automated notice to inform overpaid recipients when they have been overpaid, the cause of the overpayment, proposed agency action, and the recipient's appeal rights. This would assure that recipients are provided with proper notice and should help provide assurances that overpayments are resolved in a timely manner (see app. I, item 12).

We recommend that the Secretary direct the Commissioner to adopt a stronger and more active management role in recovering SSI overpayments by developing an automated notice to inform recipients when they have been overpaid, the cause of the overpayment, proposed agency actions, and the recipient's appeal rights (see app. I, item 26).

To improve the inquiry and application processes for SSI benefits, we recommend that the documentation involved in handling and processing oral and written inquiries be incorporated into the SSI computerized system, and that the use of the oral inquiry questionnaire and manually prepared notices be discontinued (see app. I, item 14).

To establish appropriate controls for minimizing problems associated with processing SSI posteligibility changes and to provide added assurance that prompt, effective processing action is taken, the Secretary should direct the Commissioner to:

--Establish controls in the computer system to assure field offices that all posteligibility changes transmitted by them are either posted to the record or rejected.

--Establish controls over rejects so that the system can notify field offices when information in reject messages has not been corrected.

--Evaluate the alert system to insure its effectiveness.

--Reemphasize to field offices the need to process rejects and alerts.

--Periodically monitor the field offices to insure that rejects and alerts are promptly and effectively processed (see app. I, item 15).

We recommend that the Secretary direct the Commissioner to complete actions on those recommendations--listed above--not yet fully implemented (see app. I, item 26).

To improve the controls over the SSI program's computerized system, the Secretary should direct the Commissioner to:

--Correct deficient exception controls in the system, especially for such items as income and resources, which directly affect program eligibility and benefit payment amounts.

--Improve the documentation of the system's exception control process at the field office level and maintain up-to-date consistency between actual programmed exceptions and support documentation.

--Restrict the system override capability to supervisory personnel who have the appropriate authority to make these override decisions and to enter them into the computer system.

--Remove the data exchange override capability and the "default on verification" provision from the computerized system.

--Modify the RSDI computer system to provide a complete payment history to the SSI computerized system.

--Determine why field office personnel do not enter all eligibility decisions into the RSDI computer system and take appropriate corrective action to ensure that these data are exchanged with the SSI computerized system.

--Modify the SSI computerized system to properly post RSDI eligibility decisions to all appropriate data segments in the computerized master record.

--Exchange additional data elements, such as recipient address and household composition, to reduce the potential for erroneous payments and program fraud and abuse.

--Remove, where applicable, the system limitations that necessitate the manual calculation and control of forced payment cases.

--Establish more controls over forced payment cases, assuring that all posteligibility events affecting these cases are processed in a timely manner, and that these cases are returned to regular payment status as soon as possible.

--Review existing forced payment cases to (1) identify the reason(s) for the forced payment, (2) verify the accuracy of all payments made, and (3) return cases not required to be forced paid to regular payment status as soon as possible (see app. I, item 19).

We recommend that the Secretary direct the Commissioner to fully implement the nine recommendations included above which have not yet been fully implemented. SSA should:

--Correct deficient exception controls in the SSI system, especially for such items as income and resources, which directly affect program eligibility and benefit payment amounts.

--Improve the documentation of the system's exception control process at the field office level and maintain up-to-date consistency between actual programmed exceptions and supporting documentation.

--Restrict the system override capability to supervisory personnel who have the appropriate authority to make these override decisions and to enter them into the computer system.

--Remove the data exchange override capability and "default on verification" provision from the SSI computerized system. We estimated that inappropriate use of these provisions had caused erroneous SSI payments of about $6.4 million.

--Modify the RSDI computer system to provide a complete payment history to the SSI system. We estimated that $6.3 million of erroneous payments ($6.1 million overpayments and $.2 million underpayments) occurred because

a complete history of RSDI benefit payments was not entered, verified, and used for calculating SSI eligibility and benefit payment amounts.

--Determine why field office personnel do not enter all eligibility decisions into the RSDI computer system and take appropriate corrective action to ensure that these data are exchanged with the SSI computerized system. We estimated that over $7.2 million of erroneous SSI payments were made to applicants who file concurrent claims for both SSI and RSDI benefits because applicants' RSDI benefit amounts were not communicated and properly posted to the SSI computerized system.

--Modify the SSI system to exchange additional data elements, such as recipient address and household composition, with the RSDI system to reduce the potential for erroneous payments and program fraud and abuse.

--Remove, where applicable, the system limitations that necessitate the manual calculation and control of forced payment cases.

--Review existing forced payment cases to (1) identify the reasons for forced payments, (2) verify the accuracy of all payments made, and (3) return cases not required to be force paid to regular payment status as soon as possible (see app. I, item 26).

To enable SSA to better manage and monitor changes in resource ownership and values for the SSI program, the Secretary should require the Commissioner to develop and maintain detailed automated resource information to (1) include types and dollar values of resources owned by SSI applicants and recipients, (2) use the information to detect overpayments caused by changes in resource ownership and value, and (3) contact potentially eligible individuals, thereby enhancing SSA's outreach efforts (see app. I, item 27).

To aid in preventing duplicate RSDI payments for dependent children and to more fully assure that the earnings test is being properly applied, we recommend that the Secretary direct the Commissioner to:

--Determine, from other existing social security records, the SSNs for those dependent children missing their numbers, especially students, and record them in the payment records.

--Compare the SSNs of all dependent children currently receiving benefits to eliminate duplicate payments or to correct instances where different dependents have the same recorded SSN.

--Change SSA's duplicate payment detection system to correct the type of problems disclosed by our review.

--Assure that the potential duplicate payments which are identified by SSA's duplicate payment operations are reviewed and corrected in a timely manner (see app. I, item 11).

We recommend that the Secretary:

--Monitor SSA's efforts to determine from other existing social security records the SSNs for dependent children missing their numbers, especially students, and record them in the payment records.

--Direct the Commissioner of SSA to compare the SSNs of all dependent children currently receiving benefits to eliminate duplicate payments or to correct instances where different dependents have the same recorded SSN (see app. I, item 26).

To improve the effectiveness of SSA's RSDI overpayment recovery program, we recommend that the Secretary require the Commissioner to immediately refine the Recovery of Overpayments, Accounting, and Reporting system's output to define the exact composition of the outstanding balance on unsettled accounts. This should include potential adjustment cases, accounts being recovered through installments, cases where recovery will be attempted from individuals no longer on the benefit rolls, and the length of time each overpayment has been outstanding (see app. I, item 13).

We recommend that the Secretary direct the Commissioner to immediately refine the agency's RSDI management information system to define the exact composition of the outstanding balance on unsettled accounts. This should include potential adjustment cases, accounts being recovered through installments, cases where recovery will be attempted from individuals no longer on the benefit rolls, and the length of time each overpayment has been outstanding (see app. I, item 26).

To resolve RSDI overpayments and underpayments caused by excess earnings, we recommend that the Secretary monitor the efforts of the Commissioner to:

--Resolve all uncleared 1974-77 earnings enforcement cases identified by the uncleared earnings enforcement field on the individual beneficiaries' records. Cases involving terminated students should be followed up only if information reported by the employer indicates the student had earnings in a quarter preceding the quarter in which his or her benefits were terminated.

--Improve the control system for earnings enforcement cases so that such cases continue to be periodically called up until they are resolved (see app. I, item 18).

To protect against unreported deaths of title II beneficiaries, we recommend that SSA work with the National Center for Health Statistics and the States to have (1) SSNs included on the precoded computer tapes which the Center receives containing State death information and (2) these tapes made available to SSA for periodic matching against SSA's Master Beneficiary Record (see app. I, item 32).

ADP PLANNING/MANAGEMENT WEAKNESS: DEFICIENCIES IN ACQUIRING AND OPERATING ADP EQUIPMENT

We recommend that, to improve SSA methods of acquiring ADP equipment and to better insure that the various OMB and GSA requirements continue to be met, the Secretary require that

--SSA establish procedures to insure the involvement of SSA contracting officers at the time a procurement action is initiated;

--the Office of the Assistant Secretary for Administration and Management, HEW, make in-depth reviews of SSA's actions in acquiring ADP equipment; and

--the HEW Audit Agency consider periodically monitoring future acquisitions of major SSA systems (see app I, item 1).

We recommend that SSA routinely verify that a current and proper GSA Delegation of Procurement Authority (DPA) is in effect before extending or awarding any ADP resource contract requiring such a DPA and automatically suspend all further procurement actions concerning such acquisitions when DPA renewal has not been obtained. In this regard, we note that SSA currently uses Form 3706, Procurement Planning Document-ADP, to process certain types of ADP resource acquisitions. Section E of this form constitutes a planning schedule for establishing specific procurement action milestones. Although this schedule includes a specific milestone (no. 7) for receiving an initial DPA, SSA could revise it to provide for DPA verification before contract extension or award. SSA should also consider using this revised schedule in processing all proposed ADP acquisitions. Further, SSA should include provisions in its revised ADP procurement guidelines requiring that all justifications contain the date of original preparation, so that routine revalidation at specific intervals thereafter can be made to ensure that the ADP equipment, software, or service to be acquired is still needed (see app. I, item 24).

ADP PLANNING/MANAGEMENT WEAKNESS:
FAILURE TO PROVIDE ADEQUATE
PRIVACY PROTECTION AND SECURITY

Immediate action should be taken to eliminate significant physical security deficiencies within SSA's central computer facility. In this regard, we believe one of the first actions taken should be the performance of a security risk analysis pertaining to the existing facility, as provided for under National Bureau of Standards guidelines (see app. I, item 3).

To improve security over SSI data, we recommend that the Secretary direct the Commissioner to prepare a risk analysis to determine what security measures may be needed to prevent unauthorized access to the various SSI payment tapes SSA transmits to the Treasury each month (see app. I, item 7).

To avoid unauthorized access to and exits from the central computer facility, we recommend that:

--Security guards be positioned in full view of turnstiles and that they be required to verify the picture on each authorization badge with the person using it.

--The security system be modified to allow only one temporary authorization badge to be valid for a person at any given time.

--Emergency exit wiring and connectors be secured to prohibit tampering and thus prevent unauthorized entrances and exits.

To improve controls over magnetic tapes and disk packs, we recommend that:

--The use of the tape dispatch pass be discontinued, and in its place a transmittal sheet be established to show authorization for removal of tapes and disks and that both the Tape Library Control Section and security guards be required to reconcile the number of tapes by serial number.

--Security guards be reminded of the need to search notebooks, lunch containers, and briefcases of people entering and leaving the central computer facility.

To provide more control over identification cards, we recommend that:

--Supplies of blank Social Security and Medicare cards be secured within the central computer facility.

--Effective procedures be established to ensure that non-issuable printed cards be properly destroyed.

--All identification cards be controlled and accounted for as they are used.

To improve Social Security's overall security procedures, we recommend that:

--A complete, formal risk analysis be performed to determine what security procedures need to be established for the central computer facility.

--After the risk analysis, a detailed structured approach be established for security of the central computer facility.

--At a minimum, background investigations be performed on all employees who work within the central computer facility, including personnel not employed by Social Security (see app. I, item 8).

To better protect Social Security records on workers and beneficiaries, we recommend that the Secretary direct the Commissioner to take the following actions immediately.

--Restrict terminals located in open areas of district offices to queries only.

--Provide secure rooms for the printers and consider the feasibility of having all printed output monitored and distributed by data transmission personnel.

--Restrict the ability to create records or to access the national data bases to only those data necessary for each specific class of office.

--Restrict the ability to create records or make changes to existing records in accordance with employee and maintenance personnel duties and responsibilities by requiring a unique and personal identifier for every data transmission.

--Provide a personal identifier on input documents for the person who performs the interview, prepares input documents, and reviews input documents and supporting documentation.

--Restrict knowledge of the password used to lock and unlock a terminal to the office manager, assistant manager, and security officer.

--Require this password to be changed at least monthly, and whenever any employee knowing the password is no longer employed at that office.

--Require that any expansion of the existing telecommunications system include system changes to correct security deficiencies.

The Secretary should continue to pursue an active and aggressive security program to assure the Congress, the public, and SSA beneficiaries that records are properly safeguarded against abuse, misuse, destruction, or alteration. In this effort, the Secretary should conduct a risk analysis to determine how best to correct the security weaknesses identified and determine whether other security weaknesses exist (see app. I, item 9).

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